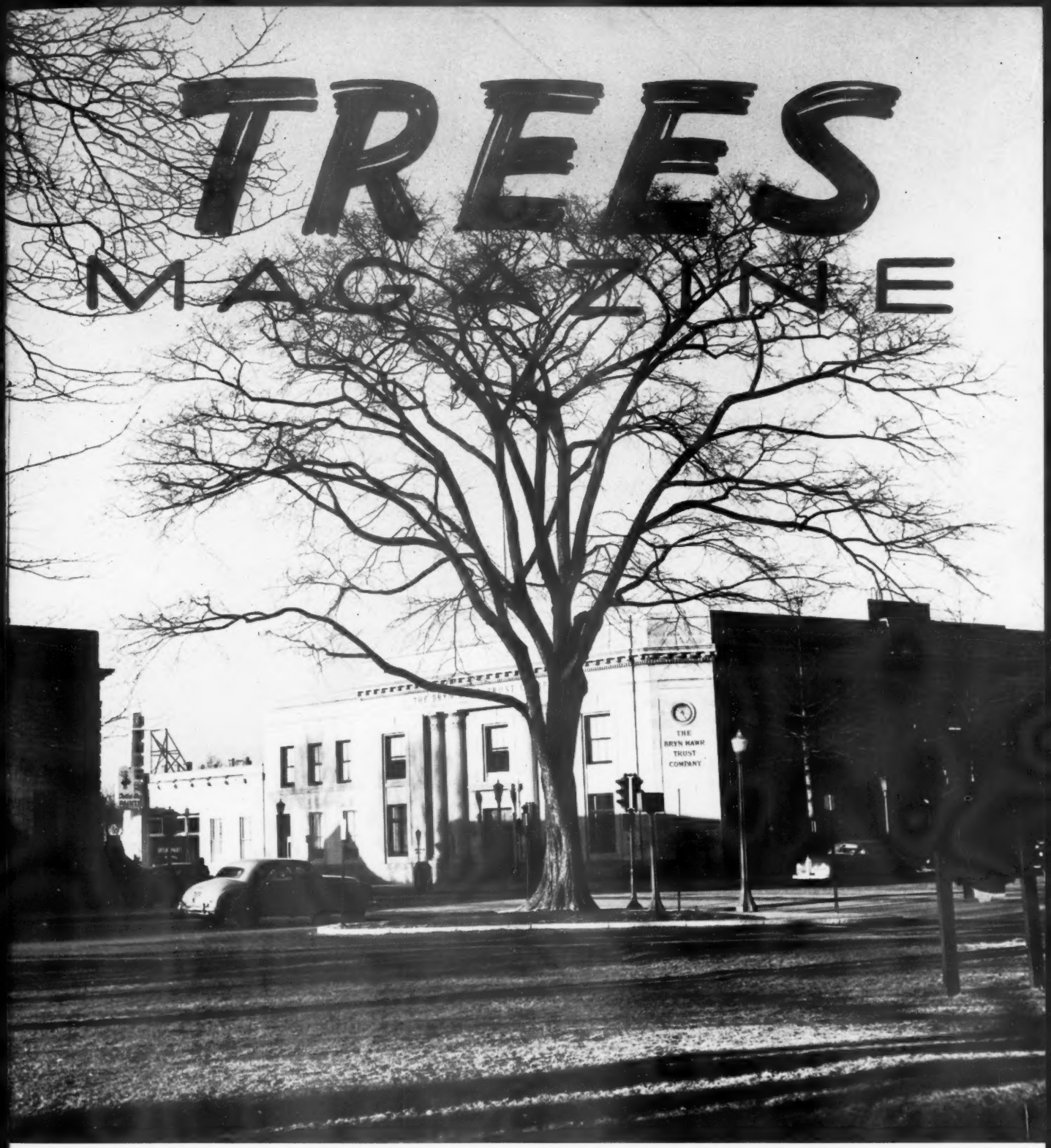
TREES MAGAZINE



Resurvey of Road Saved This Civic Asset In Ardmore, Pa. *(Story Page 22)*

Observe National Arbor Day "The Last Friday In April"

The Japanese Beetle Can Be Controlled — ***John A. Cowing***

Progress of Low Concentrate and Mist Spray — ***George E. Tirrell***

March - April, 1951 *The Journal of American Arboriculture* Vol. 11—No. 3

ANNOUNCING!

NEW McCULLOCH 7-55

HORSEPOWER POUNDS

CHAIN SAW with CUSHIONED POWER*

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TREES Magazine is a bi-monthly Journal published at Cleveland, Ohio, by Edward H. Scanlon, and is devoted to the furtherance of the technical and business administration of Trees (Street and Ornamental); Parks (Municipal and National); and Forests (State, National and Private), in the U. S. Scanlon Publishing Co., P. O. Box 5607, Cleveland, Ohio. Subscription by mail $2 per year; outside United States, $2.50. Advertising rates upon inquiry. Closing date for advertising copy—10th of month preceding date of issue. Unsolicited manuscripts must be accompanied by return postage.

ALONG THE WAY With . . . EDW. SCANLON

■ I come to the END OF WINTER with MIXED EMOTIONS—I HATE TO GIVE UP my ELECTRIC BLANKET, but I GLADLY GIVE UP the SNOW AND COLD.

■ *MILTON HEATH, HEATH TREE SERVICE, WELLESLEY, MASS., wants to add SEVERAL CONSULTANTS to his staff add SEVERAL CONSULTANTS to his staff. Quite a BIT OF TRAVEL, and anyone up to 50 IS ELIGIBLE. Drop UNCLE MILTIE a line IF INTERESTED.*

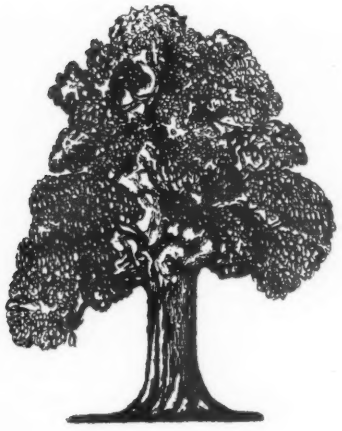
■ Just in case YOU DIDN'T KNOW it, the EARLIEST DAY on which EASTER SUNDAY can fall is MARCH 22,—the latest is APRIL 25—something about a FULL MOON.

■ *FRED RALSTON OF ALLSTON, Mass., tells us that JOE COOKE WHITE is now on the STAFF OF HIS ARBORICULTURAL concern. GOOD LUCK to JOE the east coast's FLOWERING TREE MAN and CONGRATULATIONS TO FRED on hooking a GOOD GUY.*

■ IN RESPONSE to OUR REQUESTS for bookplates we received a very nice one from CORNELIUS J. HAUCK of CINCINNATI. It is reproduced here altho IN THE ORIGINAL the TREE TOP IS GREEN and the WORDING IS GOLD. MR. HAUCK is a member of the CINCINNATI PARK COMMISSION and we shall look forward to MEETING HIM in August at the 27th N.S.T.C.

HOW ABOUT some MORE BOOK PLATES you TREE BUTCHERS?

Cornelius J. Hauck Collection



"and He spake also of Trees"

■ *SORRY TO ANNOUNCE that due to a bad attack of the flu, MR. W. M. CAMPBELL, CURATOR of the ROYAL BOTANIC GARDENS at KEW was unable TO COMPLETE the FIRST OF A SERIES of articles dealing with the SMALL MAPLES. We wish MR. CAMPBELL a COMPLETE RECOVERY and look forward eagerly to HIS VALUABLE ARTICLES.*

■ The MIDWEST SHADE TREE CONFERENCE was a dandy. HAVEN'T BEEN to one in THREE YEARS and must make a note to MISS NO MORE. Lots of guys had to RESORT TO TRAINS because of BAD FLYING WEATHER. I was LUCKY, got out both ways on the SHANK OF SHUT DOWNS.

■ *The WAGNER BOYS OF AKRON, HAROLD and CURTIS sure keep me WELL SUPPLIED with NEWSPAPER CLIPPINGS about unusual trees and TREE EVENTS. MANY THANKS compadres, THIS IS APPRECIATED.*

■ JACK KENEALY is working on the NATIONAL ARBOR DAY LEGISLATION for PENNSLYVANIA—Had a meeting IN HARRISBURG, March 19th, but the PONY EXPRESS has BRUNG NO WORD as yet.

■ *WISCONSIN, thanks to PAUL LANGE OF DELAVAN, became the TENTH STATE to legalize the "LAST FRIDAY IN APRIL" as Arbor Day—on March 1st. CONGRATS PAUL.*

■ *Hope B. G. PRATT, Jr., has recovered from a RECENT ILLNESS.*

■ W. C. GILLAM, arborist of LIMA, OHIO, reported several months ago the FIRST CASE of DED THERE. Several weeks ago STANLEY A. WELKER, MAYOR OF LIMA, requested some reprints and OTHER DATA on DED. Hope THEY STRIKE while the IRON IS HOT.

■ *The ARMY has nabbed CHARLEY YOUNG, CITY FORESTER OF BALTIMORE—as of March 15—by now CHARLEY should be SALUTING HIS HEAD OFF—we'll keep the HOLLY SOCIETY OF AMERICA going for you, bud. AW is a BRAND NEW MEMBER. Interesting stuff, HOLLY.*

■ HAROLD WAGNER, correspondent No. Z38X, of AKRON METROPOLITAN PARKS, has an interesting observation on the use of ACER CAMPESTRE, the English hedge maple, as a good SMALL STREET TREE. We AGREE 100% and are growing it. How about A PICTURE of the NICE ONE you tell about HAROLD—winter and summer pix—8x10—for the NATIONAL SHADE TREE CONFERENCE Shade Tree Selection Committee.

■ *HOWARD QUADLAND, Director of Information for DICK WHITE'S American Association of Nurserymen, has sent THREE OF A SERIES of "PLANT AMERICA" pamphlets. They are EXCELLENTLY WORKED up and everyone, NURSERYMEN AND ARBORISTS as well, should order a QUANTITY OF THEM for distribution. Address is 295 Madison Ave., N. Y. 17.*

■ Have BEEN EXPECTING some pictures from OUR GOOD FRIEND, D. RAGHAVA REDDY of SOUTH INDIA, showing ARBOR DAY tree plantings in THAT COUNTRY last year. MR. REDDY is an ARDENT ADVOCATE of FLOWERING TREES FOR STREETS—and boy, WHAT BEAUTIES he has to WORK WITH.

CONTENTS

Vol. 11 BI-MONTHLY No. 3

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TREES MAGAZINE
Box 5607, Cleveland 1, Ohio

The Editors of TREES invite discussions, comments and all types of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.

CONTENTS

Editorial 4
April Is Big Arbor Day Month Wisconsin Is 10th N.A.D. State . . 5
Use Data On Trade Name Spray Materials 6
The Japanese Beetle Can Be Controlled 9
By John A. Cowing
Progress of Low Concentrate and Mist Spray 12
By George E. Tirrell
NAA News 14
By Paul E. Tilford
Turkish Hazel Is Shapely Selection 16
Jack Kenealy Saves A Tree . . . 22
Camperdown Elm—A Useful Small Tree 23
Tree Climbing Contest Is Okayed . 25
Authors and Books 30

27

■ *Hello to DR. BILL WILLIS of the University of Pittsburgh. BILL is PROFESSOR OF POLITICAL SCIENCE—"ALONG the WAY" should take a very INTENSIVE COURSE, especially the chapters on HOW TO COMBAT PARASITES.*

■ GAVE A TALK at the U. OF PITTSBURGH several weeks ago before the ALLEGHENY COUNTY BOROUGHS ASSOCIATION on, of all things, "TREES AND STREET LIGHTING." WALT MORROW, pres. of the NATIONAL ARBORIST ASSOCIATION sat thru it WITHOUT FALLING ASLEEP. BILL WILLIS is Secretary and SPARK PLUG of the Association. NICE BUNCH down there.

■ *The Pittsburgh Park Dept. gang were there. BOB TEMPLETON, JAY STECK and SAM HEER. One of the FEW COMPENSATIONS of running this sheet is GETTING TO KNOW NICE GUYS like them in VARIOUS PARTS of the country.*

■ ENJOYED A PLEASANT day recently with SAM ANTHONY, FORESTER for the TOWNSHIP OF MT. LEBANON, near PITTSBURGH. SAM was on a TREE BUYING junket and stopped to SEE OUR STREETS of TAILORED TREES. Hope TO SEE some NICE SENSIBLE PLANTINGS down there in a FEW YEARS.

■ *JIM BROGAN, CITY FORESTER at BINGHAMTON, N. Y. is starting a TAILORED TREE program in HIS TOWN ALSO. Maybe some of THESE DAYS we'll have HUNDREDS OF CORRECTLY planted streets all over AMERICA, instead of ONE HERE AND THERE. Good luck boys—it's a LOT OF SATISFACTION to do it right.*

March - April, 1951 **Journal of the National Arborist Association** Vol. 11. No. 3

EDWARD H. SCANLON, Editor
Box 5607, Cleveland 1, Ohio
ADams 5-2357

"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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Out On A Limb

APRIL IS BIG ARBOR DAY MONTH

This month a majority of our great States will proclaim Arbor Day. How many will observe it or do anything about it we have no way of knowing, but it seems that from what we hear along the way the old interest and enthusiasm that once made Arbor Day memorable and of distinct service to the nation is waning—dangerously.

Arbor Day should not be considered solely from the prosaic viewpoint of planting trees. True, that is the awful need in this day of forest, roadside and city deforestation, but before we can launch intelligent constructive replanting, reforestation and conservation programs we must first implant—implant in the minds of school kids, their parents and even the older generations the horrible fate that befalls nations who prostitute their tree assets, both forest and ornamental. While the wholesale destruction of urban shade trees may have little tangible economic effect on the nation's welfare, it certainly has a deteriorating effect on the culture and pleasing appearance of cities and other communities. Too much of this is taking place, altho in every city removal of injudiciously planted trees is an economic and psychological necessity. Still, few cities and towns are replacing the fallen giants with more appropriate, selected trees. This is the devastating peril we face and is one of the urgent reasons why an active militant effort must be made to restore Arbor Day to a modern counterpart of its former meaning and usefulness.

The reforestation of American forests and marginal lands needs telling to the public. This can only be done if Americans are soundly indoctrinated thru the medium of an intensive program of realistic statement of practical facts. The sentimental tree lover can take part, an important part in this program if he discards the silly dogma of "woodsman spare that tree." It is not the trees we cut down that count so much from here on, it's the ones we plant, how we plant them and how many. The time to teach and practice intelligent tree usage is on us with all four feet. Too many serious, expensive, sentimental mistakes have been made, and are being made thru too little understanding of the need and practical use evaluation of tree species and varieties—both ornamental and forest.

Ten years ago TREES Magazine launched a program that we believed would eventually serve as the foundation for the promulgation of education that would lead to a clearer concept of human needs for ornamental and forest trees. This program was the National Arbor Day movement. Arbor Day at its inception in 1875 was begun for the specific purpose of encouraging the planting of trees in treeless Nebraska. It served its purpose nobly. The idea spread from state to state,

even to foreign countries. But in spite of its noble purpose and the devotion to that purpose by many thousands of conscientious people it became as a rudderless ship. Sentiment ruled the purpose and as a result many hundreds of thousands, probably millions of trees, that were inferior species, were planted in every nook and cranny of the land, and eventually became expensive, dangerous nuisances.

Where these Arbor Day trees served to make a lot of people tree-conscious the permanent good that might have resulted from the promulgation of standards upon which to select a tree for a specific use, have backfired and now many people living in the influence of these miscast trees heartily despise any and every tree. Not everyone, but too many.

The purpose of the National Arbor Day movement therefore is to effect a uniform day of observance, legally, in most, or all states, making it possible to enlist the aid of national media of expression, such as radio, television, magazines, etc., to foster an understanding of real tree values on the basis of use and purpose. No more hit and miss. This year ten states will legally observe Arbor Day on the "Last Friday in April." This is probably the greatest number of states in the history of Arbor Day, in which there has been such a widespread observance held on the same day. Previously a majority of states held the day on any date in a specified month by proclamation of the governor. Sentiment and minor considerations involving the best planting time should not be allowed to interfere with a further establishment of the "Last Friday in April" as Arbor Day in at least a majority of the states. Once such an objective is reached serious plans can be considered for releasing constructive and lasting information to the various media.

Progress is ever slow but in the ten states now legally observing the "Last Friday in April" as Arbor Day a very important contribution has been made toward the building of a granite foundation for horticulture and forestry—and heaven knows they need it. The National Arbor Day states are: Maine, Massachusetts, Connecticut, Rhode Island, New Jersey, Indiana, Illinois, South Dakota, Nevada and just recently, on March 1st, Wisconsin inscribed its name on the honor roll. Let's back this fundamental with everything we have in the remaining states. A majority of states is needed before we can interest national media in the program.

WISCONSIN IS 10th NAD STATE

The list continues to grow in the program to effect legislation to adopt the "Last Friday in April" as National Arbor Day.

On March 1st Wisconsin's Governor Walter J. Kohler signed joint Resolution No. 22 A making that state the tenth to legislate the "Last Friday in April" as Arbor Day.

Chairman and sparkplug of the Wisconsin Committee responsible for this achievement is 83 year "young" Paul Lange, arborist of Delavan, Wis. Paul picked up the Arbor Day ball which had been bouncing around Wisconsin for several years and very quietly ran for a T. D. (that's radio for touchdown). Of course it required some grand down field blocking and this was supplied by Dr. O. R. Rice, Speaker of the Assembly. Dr. Rice was enthusiastic about the proposal when approached by Paul to present it to the Wisconsin Assembly. Both Speaker Rice and Chairman Lange feel that the measure, correlated with similar activities in nine other states, should serve to revive the interest that formerly prevailed in the spirit of Arbor Day. They feel that national recognition on the "Last Friday in April" should stimulate interest in reforestation, street and home tree planting.

Paul Lange, Arborist, Delavan, Wis. Sponsor of Arbor Day bill in Wisconsin

Paul and Dr. Rice had the enthusiastic support of the Wisconsin Park and Recreation Society; the Delavan Parks Board, of which Paul has been a member for 24 years, and the Delevan Rotary and Lions Clubs.

After passing the lower house without a dissenting vote Senator Wm. F. Trinke sponsored the bill in the Senate. When it came to a vote, Senator Trinke moved to suspend the rules and treat the Resolution as privileged. It was passed unanimously.

Paul Lange has experienced a very full and interesting four score and three years. He graduated from Gallaudet College in 1892, taught at the State School for the Deaf (Iowa) for 32 years and in those years became an ardent avocationist in tree preservation. Upon retirement in 1933 he became a full-time arborist and has recently turned over his business to his son Rudolph. He is a Rotarian and as mentioned before, has served for 24 years on the Delavan Park Board. His successful effort in effecting the passage of the Bill making Wisconsin the tenth state to adopt the "Last Friday in April" as Arbor Day, he considers as one of his proudest achievements.

Similar bills are pending in the Ohio and Pennsylvania legislatures. If these two states can be added to the fold it will complete an almost continuous row of states from the eastern seaboard to the midwest where the "Last Friday in April" has been designated as Arbor Day. In addition to Wisconsin the other states on the roster are; Maine, Massachusetts, Rhode Island, Connecticut, New Jersey, Indiana, Illinois, South Dakota and Nevada.

Dr. O. R. Rice, Speaker of the Assembly, Wisconsin Legislature, who introduced N. A. D. bill

Patronize the Advertizers. Mention TREES

Use Data On Trade Name Spray Materials

Puratized Agricultural Spray

By Dr. Sylvan I. Cohen,
Gallowhur Chemical Corporation,
801 Second Ave., New York 17, N. Y.

Puratized Agricultural Spray was developed in 1943 as a fungicide to combat the diseases of many fruit and ornamental trees and shrubs. It contains a patented complex chemical called phenyl mercuri triethanol ammonium lactate, which was the first organic mercurial to be applied safely to the foliage of growing plants. The early developmental research was conducted in cooperation with Rhode Island State College, where it was proven that *Puratized* possesses many unique properties. Foremost is its ability to eradicate certain fungus infections shortly after they have begun. Whereas most fungicides offer only protective action and must be applied before infection occurs, *Puratized Agricultural Spray* can inactivate certain destructive fungi after infections are established. This eradicant action takes place without injuring the plant tissues. It permits a grower to control many fungus diseases with belated spray applications when heavy rains and other factors make it impossible to spray a tree adequately before an infection period. Another valuable characteristic of *Puratized* for use by arboriculturists is that it leaves no visible unattractive deposit upon sprayed foliage. *Puratized* is a colorless liquid which is instantly miscible with water. Therefore, it can not clog spray nozzles or tend to settle out in a spray tank. It can be applied to trees adjacent to painted buildings because it does not attack or discolor their painted surfaces. Lastly, it can be mixed in the same tank with the commonly-used insecticides like DDT, lead arsenate, nicotine, chlordane, rotenone, TEPP, and parathion.

In 1947 scientists of the Illinois State Natural History Survey published information showing that *Puratized Agricultural Spray* produced excellent control of black walnut leaf spot and sycamore anthracnose. The fungicide was used at the rate of 3 pints per 100 gallons of water as follows:

Black walnut leaf spot: Spray twice beginning at mid-June and again 2-3 weeks later.

Sycamore anthracnose: Apply 3 to 5 times starting 1 to 2 weeks before buds open; second, as leaves unfold from buds, and 1 to 3 additional applications at weekly intervals depending upon rainfall.

Our further experiments have demonstrated that oak anthracnose is also controlled by following the schedule for sycamore anthracnose. In limited tests, satisfactory control has been obtained of the above diseases at the reduced concentration of 1 pint of *Puratized Agricultural Spray* per 100 gallons of water.

Puratized has also produced effective control of the following ornamental diseases in limited scientific field trials, when applied at the rate of 1 pint per 100 gallons of water:

1. Maple tar spot and anthracnose—Apply *Puratized* 2-3 times at intervals of 2 weeks starting when the leaves unfold.
2. Elm black spot—For maximum disease control apply *Puratized* 3 times at intervals of 2-3 weeks during growing season.
3. Rhododendron and mountain laurel leaf spots—These diseases have been controlled by 3 to 4 sprays of *Puratized Agricultural Spray* applied at 10-14 day intervals beginning about mid-June or when symptoms first become evident.
4. Cedar blight — Several applications have given excellent control of this disease in nurseries during the rainy spring. Sprays should be applied at 7-14 day intervals depending upon weather conditions. Seven applications may be necessary for satisfactory control.
5. Horsechestnut leaf blotch — Apply *Puratized* beginning when buds open and at intervals of 2-3 weeks until June. Three applications are generally sufficient, although a fourth spray may be necessary during seasons favorable to disease development.
6. English Hawthorn leaf blight—Depending upon weather conditions and the severity of the disease, apply *Puratized* (2 pints per 100 gallons of water) 3 times at 10-day intervals beginning in May. Sometimes a final application may be necessary in early August.
7. Hickory anthracnose — Depending upon weather conditions and the severity of the disease, apply *Puratized* (2 pints per 100 gallons of water) 3 times at 10-day intervals beginning in May. Sometimes a final application may be necessary in early August.
8. Red oak twig blight — Depending upon weather conditions and the severity of the disease, apply *Puratized* (2 pints per 100 gallons of water) 3 times at 10-day intervals beginning in May. Sometimes a final application may be necessary in early August.

In addition to the use of *Puratized Agricultural Spray* in standard hydraulic spray equipment, it has also been applied effectively with mist-sprayers. Research workers at the Connecticut Agricultural Experiment Station in 1948 published the results of their experiments with *Puratized* and other fungicides for the control of sycamore and London plane anthracnose. Three applications were made, 1) as the leaf buds swelled; 2) as the leaves were two-thirds expanded; and 3) when the leaves were fully expanded, using the following formulation:

Puratized Agricultural Spray	1½ pints
Glycerine	1½ pints
Water to make	6 gallons

Each treatment required 1½-2 gallons of formulation for adequate coverage of 50-foot trees, and did not cause more than an occasional trace of leaf injury. The spray operators did not experience any discomfort or irritation during these applicatoins.

In other concentrate-sprayer work, *Puratized Agricultural Spray* has been used in large orchards since 1948 to control apple scab. Concentrates were prepared containing as much as 1 pint of *Puratized* per 10 gallons of water, which was applied to the trees at one-tenth the rate for normal coverage (depending upon the size of the tree and the amount of foliage). Such concentrate-spraying produced excellent disease control and did not cause any phytotoxicity.

Puratized in the concentrated form is a skin-irritating liquid, and therefore, it must be handled carefully. When diluted beyond 1:100, it is usually not irritating. If the concentrated solution should accidentally contact the skin, irritation can be prevented by promptly flushing the area with water. As a general precaution, always wash your hands with water after handling *Puratized.* Keep clothing buttoned during spraying so as to expose a minimum of skin area. Use *Puratized Agricultural Spray* only as directed in the instructions accompanying the product.

For further information concerning this product, write to the Gallowhur Chemical Corporation.

Chemistry and the Arboriculturist

By R. M. Roberts,
E. I. duPont deNemours & Co.
Wilmington, Del.

Among a number of relatively new developments in the agricultural field from duPont Company research work during the past decade, three compounds stand out as aids to the arboriculturist. Each of these developments is in a dif-

ferent field of biological science—a weed killer, an insecticide and a fungicide.

Listed under the duPont names by which they may be obtained, these three chemical aids are discussed briefly below.

"Ammate" Weed Killer

This is the compound ammonium sulfamate—an ammonium salt of sulfamic acid. Its arboricultural uses fall into three distinct categories.

Best known, perhaps, is the effectiveness with which "Ammate" kills poison ivy, poison oak, poison sumac, and other unwanted growth of the low brush type. For this purpose, from three-quarters to a pound of the yellowish crystals per gallon of water is recommended, to be sprayed on foliage until it is thoroughly wetted. Application should be made when the plants are in full leaf, offering the greatest amount of surface from which the chemical may be absorbed and translocated into the root system.

Equally important is the use of "Ammate" to kill undesirable trees. For this purpose it has been used extensively by foresters in the southern states, where scrub oaks prevent the proper seedling development and growth of pine stands. Two methods of application are popular. One is the "frill"—a series of single, overlapping axe strokes encircling the tree and leaving the chips pried away from the trunk sufficiently to introduce an "Ammate" solution into the pocket they form. The other method, known as the "cup," is made with two axe strokes, one two to three inches above the other, and prying out the chip between. In this opening, dry crystals of "Ammate" weed killer are deposited, so they may be absorbed into the sap of the tree.

Third popular use for "Ammate" is in the field of general brush control. Here, as in the case of poison ivy, the chemical is dissolved in water and sprayed on foliage, using a pump with sufficient pressure to drench brush up to 12 to 15 feet in height. Complete coverage is essential and produces such an effective control of most species that the compound is finding wide use by power and telephone companies throughout the country in the maintaining of brush-free rights-of-way.

Where brush or trees have been cut, "Ammate" may be used in a concentrated solution (three to four pounds per gallon of water) as a stump treatment. This may be either sprayed or painted on the freshly cut stump, to inhibit sprouting and start the process of decay in both root and stump.

"Ammate" has a number of qualities which make it ideal for work around estates, parks, roadsides, and other places frequented by the public. When used as directed, it presents no toxic hazard to children or pets. It is nonflammable and goes into solution in water readily, so is no problem to apply with any type of spraying equipment. Its effect on the soil is so temporary that a good growth of grass usually appears the year following spraying.

The user should recognize, however, that "Ammate" is highly corrosive when left in spray tanks or allowed to stand on any metal objects which may accidentally be sprayed. Equipment should be flushed out with water, then rinsed with a solution of water and a caustic, such as baking soda, immediately after use.

"Marlate" 50 Insecticide

This is a 50 per cent wettable powder of the compound known as methoxychlor, which during the past several years has won recommendations from experiment stations in almost every state in the union, both for its effectiveness in controlling certain insects, and for its comparative freedom from toxic hazard to warm-blooded animals, including man.

Dr. Arnold J. Lehman of the pharmaceutical division of Food and Drug Administration has referred to methoxychlor as "one of the safest of insecticides." This is because, unlike certain of the other modern residual bug killers, it does not tend to be stored in body tissues when accidentally consumed as a spray residue on fruit or other crops.

Because of this element of safety, it is ideal for use in locations frequented by children and pets, where maintenance of public health is of prime consideration!

Methoxychlor is effective against a wide variety of orchard pests. In shrubbery, rose gardens and flower beds, it is prized as a control for Japanese beetle. While insufficient experimental work has been done in the field of ornamental tree insect pests to merit widespread recommendations, it is known to be effective against the elm bark beetle, carrier of Dutch Elm disease, and will probably control a number of other destructive bugs.

In general, as a spray for either fruit or ornamental trees, methoxychlor, in the form of "Marlate" 50 insecticide, should be mixed at from two to three pounds per 100 gallons. If dusting equipment is to be used, a 10 per cent dust of the same formulation should be applied. Two or more applications at intervals of one to two weeks are usually recommended. Because of its relative safety, methoxychlor may be used close to harvest time to protect fruit crops, rather than being discontinued several weeks before harvest and giving the insects a chance to gorge themselves, as is recommended with the more toxic materials.

Methoxychlor is compatible with most other insecticides and fungicides, so may be included in an all-purpose spray mixture for both insect and disease control.

"Fermate" Fungicide

Active chemical ingredient in this modern fungicide is ferric dimethyl dithiocarbamate. It is one of a family of "dithiocarbamates" — which includes "Zerlate" and "Parzate" fungicides. These organic materials for plant disease control, because of the effective protection they afford from disease spores and their residual activity, are rapidly supplanting the older type metallic dusts and solutions used for these purposes for a number of years.

Of late years "The Plant Disease Reporter," official publication of the division of mycology and disease survey, U. S. Department of Agriculture, has recounted numerous tests relating to the use of "Fermate" and other of these dithiocarbamates in disease control. Following are a few such references:

For anthracnose on sassafras, "Fermate" gave good control, with no injury, in Delaware.

For blackspot on roses, in Texas, duPont Rose Dust (a mixture of "Fermate" and sulfur) gave good control of blackspot with corresponding increases in plant growth . . . In New York a spray containing a half pound of "Fermate" and four pounds of wettable sulfur gave excellent blackspot control.

For gleosporium ulmeum leaf spot on elm, in Illinois, "Fermate" (two pounds per 100 gallons) gave better control than Bordeaux . . . and without injury.

For various foliage diseases on holly in New Jersey, severe leaf burn and defoliation occurred with Bordeaux at several different concentrations in the summer. "Fermate" and "Parzate" fungicides did not cause injury, and "Fermate" was declared one of the materials used on trees where the best foliage color occurred.

For apple rust, nine sprays, including one based on straight "Fermate" and two others where "Fermate" was combined with other materials, were compared at a Poughkeepsie, N. Y., experiment station. All the sprays containing "Fermate" ranked first in control.

As with methoxychlor, "Fermate" is compatible with most commonly used insecticides and fungicides. In general, a pound and a half of "Fermate" per 100 gallons is the dosage. However, in sprays containing sulfur, the "Fermate" concentration is cut down to a pound or less, depending on the amount of sulfur.

In either sprays or dusts, "Fermate" works equally well. It spreads and sticks

(Continued on Next Page)

naturally on most foliage and fruit, giving good coverage and long protection, without danger of injury to plant surfaces.

Pyrethrum and Rotenone Sprays

By PATRICK J. CONNOLLY,
S. B. Penick & Company, N. Y.

Pyrethrum and rotenone sprays for the control of many shade tree insects are being applied to a greater extent each year despite the increasing number of materials from which to choose. There are several reasons for this but undoubtedly the primary one is the increasing customer-awareness of the hazard of some of the newer agricultural chemicals—and some of the older ones, as well. Much of this awareness is due to newspaper and magazine articles describing the toxicity of some of the newer materials and designed to startle the reader rather than inform him. As a result, very often the reader is left with a distorted picture of their toxic hazard. Nevertheless many home-owners are aware of the potential hazard of certain sprays and prohibit their use on their property. Others, and they are probably few, may go so far as to specify that the non-toxic insecticides be used — pyrethrum and rotenone.

This has its good aspects. It seems proper that around kennels, stables, barns, and play areas safe materials should be used. This can be an excellent selling point when properly developed as these special areas are of particular concern to the customer. Special attention to these areas indicate special service to the customer.

Of course, rotenone and pyrethrum have other advantages which give them a part in a shade tree program. They are quick killers and where a heavy infestation must be brought under control quickly, they are first-rate. They are effective against both sucking and chewing insects. Where spotting of foliage, grounds or buildings is undesirable—such as occurs with lead arsenate — pyrethrum and rotenone are indicated.

Rotenone and pyrethrum for shade tree work were originally used as wettable powders. The use of pyrethrum powder was very limited. However, rotenone in the form of Derris powder-rosin residue emulsion or a Cube powder-rosin residue emulsion—was widely used, primarily for the control of the Japanese beetle. More recently, emulsifiable rotenone concentrate, emulsifiable pyrethrins concentrates, and pyrethrin-rotenone combinations have been available. The concentrates have obvious advantages over the wettable powder. They are easier to handle, store, mix and apply. They give a better, quicker kill and have superior sticking characteristics. They leave no unsightly residue.

Rotenone acts primarily as a contact poison but because of its residual action (lasting up to a week), it also acts as a stomach poison. Rotenone has a repellent action, as well, and it is this characteristic which made it effective against the Japanese beetle. Pyrethrum acts solely as a contact poison, producing a very rapid kill, but has little or no residual action. Therefore, although rotenone alone will do an excellent job against many shade tree insects, the addition of pyrethrins insures a rapid kill; in addition it raises the kill and increases the kind of insects controlled.

The 5% rotenone emulsifiable concentrate which is the standard material is generally mixed at the rate of 1 quart to 1½ quarts per 100 gallons of water.

The usual pyrethrin-rotenone combination contains approximately 1% pyrethrins and 2% rotenone. Such a concentrate would be used at the rate of approximately 2 quarts per 100 gallons of water.

The pyrethrin-rotenone spray is effective against a wide range of insects. Its use is limited to some extent because of its higher cost, but its special qualities make it worthwhile for many applications. Timing of the application requires considerably more attention than is true with most other insecticides. This is due to its short-lived residual action. As a result, the spray must be applied when the insects are most vulnerable, when the insecticide can most nearly do a complete job.

Among the shade tree insects readily controlled by either the rotenone emulsion or the pyrethrin-rotenone emulsion are the following:

Cankerworms
Tent caterpillar
Fall webworm
Oak leaf roller
Bagworm
Spiny elm caterpillar
Catalpa sphinx moth caterpillar
Larch case bearer
Rose leaf beetle
Pear slug
Pine sawfly larvae
Elm leaf beetle
Currant worm
Willow leaf beetle
Mexican bean beetle
Striped cucumber beetle
Lace bugs
Aphids
Euonymus scale
Coddling moth
Cottony maple scale
Spider mites

Although the rotenone emulsion or pyrethrin-rotenone emulsion produces a fair kill on Japanese beetles, Asiatic garden beetles and June bugs, it appears to act against each insect most effectively as a repellent. A repellency of 6 or 7 days can be expected from each spraying.

The synthetic pyrethrin, allethrin, has been commercially available for over a year. However, only preliminary work has been done with this material in the agricultural and horticultural field. Initial tests did indicate, however, that allethrin is about as effective as pyrethrins against the red spider and the two-spotted spider mite. Therefore, a rotenone-allethrin combination may prove as effective as the natural combination. This is important in the light of the continuing pyrethrin shortage.

In fact, in view of the shortage developing among many of the newer insecticides, some consideration should be given to the use of a rotenone emulsion during 1951 as an alternate material. The supply of rotenone is fairly good and is expected to continue so. If the supply of spray materials becomes critical, it is well to have experience with other materials which may be in more plentiful supply. This season will provide an opportunity to use the rotenone emulsion in many applications. Experience gained with a rotenone emulsion this year may prove of very great value in the years ahead.

Shade Tree Fungicides and Insecticides

By G. S. HENSILL, *Assistant Manager, Research and Development*
California Spray-Chemical Corporation, Richmond, California

Materials for use on shade trees as fungicides and insecticides are in many respects similar to those in commercial or agricultural usage. There are some differences, however, and during the past few years there have been drastic changes in the type and composition of insecticides and fungicides. Included are discussions of some of the available and most satisfactory products and programs for control of shade tree insect pests and diseases:

Insect Pests

The first standbys for control of insect pests on shade trees are petroleum oil sprays. These are of the refined or phytonomic types as ORTHOL-K or VOLCK series of spray oils usable on shade trees in the dormant or foliage stage for control of scale insects, red spider mites and eggs, as well as eggs of other insects. Petroleum oil sprays are also valuable as stickers and spreaders for some of the fungicidal materials as will be mentioned.

As general sprays and for control of mites, there are some new products

(Continued on Page 26)

The Japanese Beetle Can Be Controlled

By JOHN A. COWING,
Structural Engineer,
City of East Cleveland, Ohio

The origin of this problem of Japanese Beetle control and the actual procedure which was followed in the work involved and its statistical results and comments are herein stated.

Mr. Charles F. Irish, Arborist of Cleveland, who is exceedingly persistent in the fight against this pest, invited me to observe cause and effect of damage in Bratenahl Village in 1941. At this demonstration, Dr. J. B. Polivka, Assistant Entomologist of the Agricultural Experimental Station of Wooster, Ohio, who was in charge of the meeting, was consulted along with Mr. Irish as to the possible course that the City of East Cleveland, Ohio should follow in the eradication of the Japanese Beetle, a plan of action was outlined which the City followed.

The control was carried on without a change of any regular city operating function or service. The field conditions were usual and what may be expected where grass, flowers, vines, shrubs and trees are regular planting material.

This article serves the dual purpose of showing a simple, inexpensive control method used in the eradication of the Japanese Beetle and factual evidence of the success of the effort applied.

Beetle traps were borrowed from the State of Ohio for the ensuing year. The City was divided in about 100 squares of 900 feet by 900 feet. One trap was placed in each square. 900 feet was chosen because it was thought that a beetle could perceive the odor of the trap bait for this distance. Therefore, one trap was deemed sufficient for the area of a square.

Through these traps, which were of minor control significance, they gave an indication of the beetle population and concentration. They also were of advertising value, making the citizens "beetle conscious". The local newspaper was also used in this connection, principally for enthusiasm in the beetle fight.

For the following year, beetle traps were purchased from George D. Ellis and Sons, Inc., 309 N. Third Street, Philadelphia 6, Pennsylvania. One pint glass mason jar was used to catch the bugs. A hole should be drilled in each jar by the use of a glass drill to let the rain water out. It was thought that interest would be aroused if people could see the trapped beetles; that is why glass was chosen in place of the usual screen receptacle. Six feet of ½" round steel reinforcing rod bent on one end with a 10" right angle bend, a nick placed at the end of the bend to carry the trap handle, was purchased and used to support the trap. This rod was used by driving it into the ground vertically for a distance of about 18". The trap was then placed complete with mason jar and beetle oil at the nick at the end of the bend of the rod.

The traps were usually placed in an area, on property that looked as though care was used in the upkeep of the yard in reference to the lawn, flowers,

(Continued on Next Page)

TO WHOM IT MAY CONCERN:

You have been issued a Japanese Beetle trap and 11 post cards dated respectively for each week in the campaign carried on by the City of East Cleveland as a means of study. In order that we may arrive at an accurate figure and make as complete a study as possible, we must have a report from each area each week even though, in some cases, no beetles may have been trapped for that particular week. At the end of the season, a report of our results is turned over to Dr. J. B. Polivka, Entomologist of the Ohio State Agricultural Experimental Station.

The success of our campaign depends on your sending us your post card each week. We ask your cooperation in this matter, for with your help, we can make this year our best Japanese Beetle Campaign Study year.

THE CITY OF EAST CLEVELAND

BATTLING THE JAPANESE BEETLES

The City of East Cleveland's Control Efforts

By applying any one compound in this list to lawns, by mixing and spreading it with organic fertilizer or top soil at the rate shown.

	50% DDT dust	**3 pounds per 1,000 sq. ft. of lawn**
	40% Chlordane	**⅓ pound per 1,000 sq. ft. of lawn**
Sold as:	(Synchlor)	
	(Dow-chlor)	
	(Octachlor)	
	(Etc.)	
	Lead arsenate	**1¼ pounds per 100 sq. ft. of lawn**

Each is good in the ground for four or more years.
Apply any time between spring and fall.

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shrubs, etc. It was found that best record-keeping was by couples whose ages were in the thirties.

An off-duty fireman was generally employed to place the traps. His instruction was to select the likely property, contact the occupant, and obtain the necessary permission and consent to receive a trap and supply the weekly data. He then placed the trap with glass mason jar and bait in the sunniest position on the lawn at an equal distance away from foliage, flowers, etc. With each trap, the occupant was given numbered envelopes for the beetle area containing (a) eleven dated postal cards with return address, (b) instruction in the use of the cards, (c) instruction in the ways to poison a lawn, and (d) general instructions. This envelope was made in the office before the season opened. (See exhibits No. 1, 2, 3). The name of each occupant and location of each trap was placed in a small notebook under the proper area number together with dates of each of the eleven weeks that the trap remained in place. This record was then used for the entry of each week's total of beetles trapped as disclosed by the incoming postal cards, the week ending on Saturday. The season's summary was obtained from these totals (see exhibit No. 4). Below is an example of a typical area record.

Area No. 96
Trap No. 53

Name: John A. Cowing
Address: 1939 Taylor Road

7/3	2
10	27
17	28
24	82
31	125

(Continued on Page 20)

CONTROL RECORD

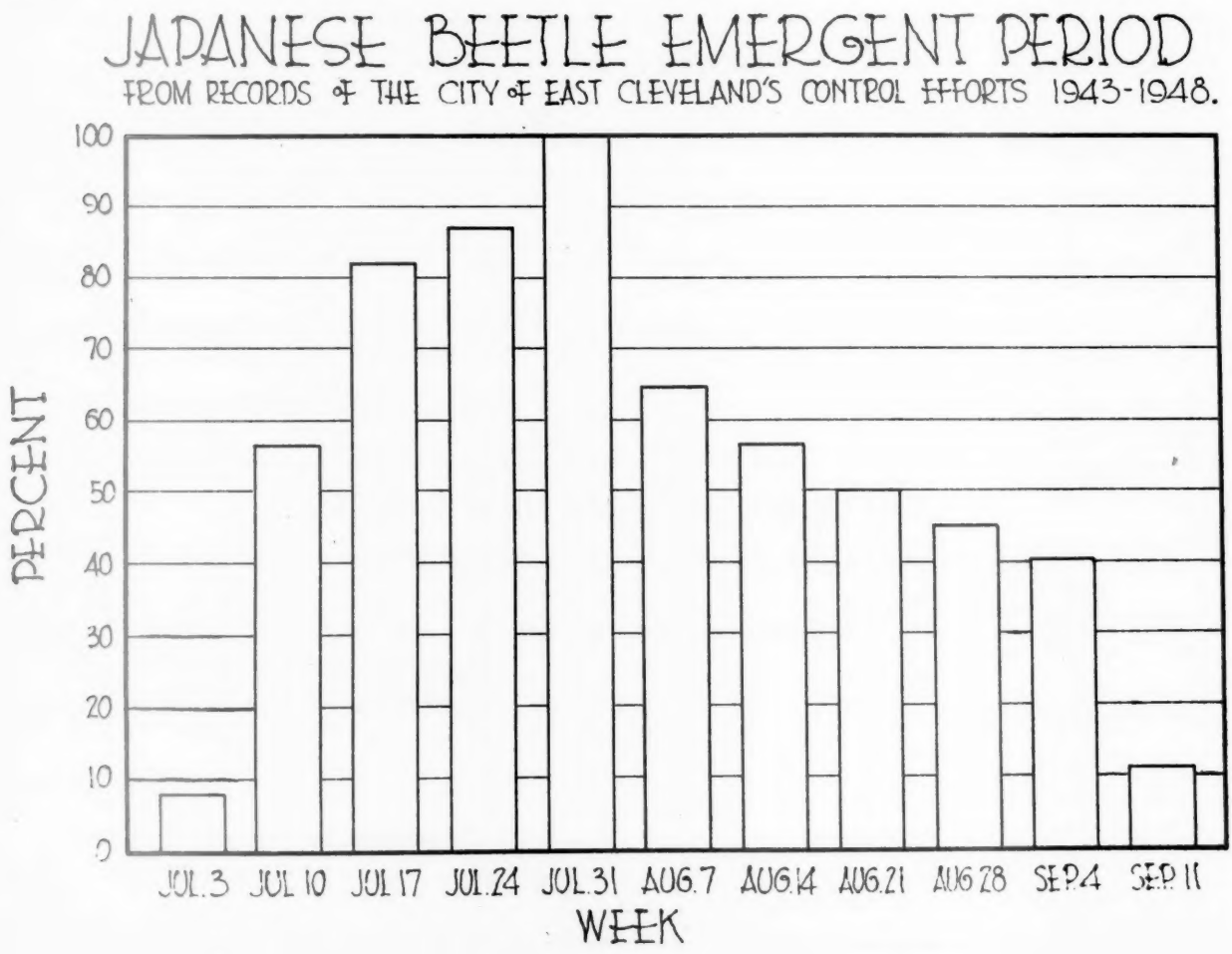
Japanese Beetle Trap No......**for Area No.**.....

Name .....

Address .....

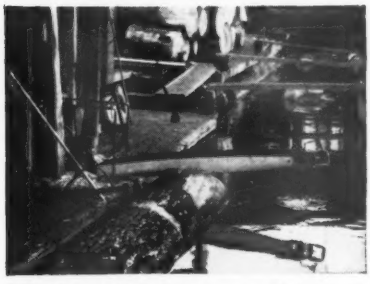
Traps should be emptied Saturday for the week ending July 8, 1950. Do not put Beetles in trap by hand. This trap is for trapped beetles only. To destroy the beetles, unscrew the jar or cage and dump into a metal bucket containing hot, soapy water. Count the beetles and place the number of them here..... After this card is filled out completely in ink, please drop it in the nearest postal letter box.

THE CITY OF EAST CLEVELAND



ATKINS "Curled-Chip" CHAIN*

Un-retouched photograph of Atkins Electric Chain Saw equipped with Atkins "Curled-Chip" Chain. Note evidences of high cutting speed and complete absence of vibration.



Atkins Electric Chain Saw in use as deck saw, to trim logs and make peeler blocks from long logs in pond of plywood plant. For best results use Atkins "Curled-Chip" Chain in an Atkins Electric Chain or Deck Saw.

The outstanding chain saw advance in many years! This new chain applies the Atkins "Curled-Chip" cutting method that has long been used in metal cutting and woodworking. Specifically, it accomplishes these results in either crosscutting or ripping:

CUTS FASTER — chips *glide and curl* from the tooth with less friction . . . CUTS STRAIGHT — because of "Curled-Chip" tooth design and anti-run depth gauge . . . CUTS EASIER — takes less power . . . SHARPENS EASIER — *without dismantling* . . . LASTS LONGER — fewer sharpenings needed, less metal removed . . . FEEDS ITSELF — no "riding".

If you use chain saws—no matter what kind—find out how much Atkins "Curled-Chip" Chain will step-up their performance. Call in your Atkins Chain Saw Distributor —or order direct, specifying make and size of chain saw and whether for crosscutting or ripping. Now furnished in either square chisel or curled-chip type chain.

ATKINS DECK SAWS

The economical way to mechanize yard bucking and speed up production. Adaptation of Atkins Electric Chain Saw, by simple direct drive attachment to any type of motor. Single operator cuts largest logs easily and quickly.

ATKINS CIRCULAR SAWS

Both Solid and Inserted Tooth Saws in a full range of sizes. Famous "Silver Steel" Saws — tough, hard-tempered — built to stand-up under heavy feed — to cut better, faster, cleaner. Real cost-reducers in any mill!

* Patent No. 2,326,854
Other patents applied for.

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MAKERS OF BETTER SAWS FOR EVERY CUTTING JOB

PROGRESS OF LOW CONCENTRATE AND MIST SPRAY

By George E. Tirrell,
Mist Sprayer Division,
A. B. Farquhar Co., York, Pa.

The successful entrance of the concentrate and mist sprayer into the field of agriculture has been responsible for creating much more interest in this method of spraying than was the case while it was being used exclusively for shade tree and fly and mosquito control.

Many more people are becoming aware of its existence and beneficial possibilities and a most important transition is taking place in the university extension departments.

Hydraulic or bulk spraying started when someone added chemical to water and sprinkled it on to foliage by dipping a brush broom into the mixture and shook it over the plant in an attempt to evenly distribute the chemical. Because scientists from university and college extension service departments were in at the beginning and have contributed to the development of hydraulic spray up to the present, the public naturally recognizes these men as authority.

When the mist sprayer suddenly entered the field these men were almost totally unprepared to make suggestions or recommendations for its proper use. The public however, bombarded the extension departments with questions pertaining to the new method. In an attempt to either answer or evade a direct answer, much confusion resulted which has not been entirely dispelled to date.

With the acceptance of the concentrate sprayer into the field of agriculture many changes have taken place in the recommendations for application of the chemicals.

While some of these recommendations can be applied successfully by the arborist others divide the use of air as a carrier for chemicals into two distinct classifications. Namely Low Concentrate Spray and Mist Spray.

The success of mist spray as applied by shade tree men is a matter of record based on control, results and economy of operation. This success would have been even greater if there had been better cooperation between the sprayer operators and their local extension service departments. In too many instances derogatory remarks by the scientists with reference to the mist method distracted the operators from the best known recommendations for success of the mist method to other recommendations totally unsatisfactory. This statement can be proven by written records now on file.

However, there was enough evidence of success in this method of spray application to attract the attention of the agriculturist and enough pressure was brought to bear upon the extension service and experiment stations so that by the year of 1949 much work was being done by these departments toward a concentrate spray program which would be both safe and effective from the standpoint of control and chemical burning.

Previous to this time mist spray mixtures had been for the most part what might be termed extreme concentrates, especially where the old standby wettable chemicals such as arsenate of lead, dry sulphur, copper, etc., were concerned.

The mixtures were made as heavy as possible with consideration for spray discharge jet clogging and to retain enough moisture so as not to dry out during the flight from nozzle to foliage.

This last consideration is most important in mist spray because of the small size droplets necessary to effect good control of pests in a tree or shrub while directing the spray from one side only.

In conducting most of the agricultural spray experiments especially those conducted in fruit orchards and groves the scientists began their tests by gradually increasing the amount of chemical that had been prescribed for safe hydraulic applications. Thus if 10 pounds of chemical in 100 gallons of water is the prescribed amount for application with the hydraulic sprayer, this would be termed a 1X concentrate. 10 lbs. of chemical in 50 gallons of water would be a 2X concentrate, etc. Using this approach as a basis to work from, the scientists conducted their experiments by comparing the results obtained by the application of the various concentrates. The results were very satisfactory and early in the year of 1950 orchardists were being instructed in the proper approach to a concentrate spray program by recognized authority. The scientists from extension service departments had at long last entered the field of airborne concentrate spray. The excellent results experienced by the users of the concentrate sprayer in the bad scab year of 1950, from the standpoint of both control and economy, has been the cause for much enthusiasm.

The object of this article is to explain if possible, the difference between agricultural concentrate spray as it is now being applied and mist spray.

For example. The agricultural orchard spray program calls for from 2 to 3 gallons of spray to be applied to the maximum height tree of 40 feet. The spray has to be applied from both sides of the tree. The chemicals are applied from 2X to 8X concentration in majority.

Air velocities of from 90 to 150 miles per hour are advised in volume sufficient for violent agitation of the foliage. The average orchard sprayer delivers up to 5 gallons or more per minute of spray material into the air stream.

This translated means that larger droplets are employed in this type of concentrate spray than with mist. It also means that the material is deposited by force, or in other words at impingement speeds. Because of the low concentrate being used there is little loss of control or loss of material represented in the small buoyant droplets that may be blown out of the spray area by the air power of the spray machine.

While there may be a slight wetting of the foliage there is not loss of material by runoff and while much more material per tree is used than with the mist method, little or no danger of foliage burn is experienced because of the low concentrate mixture.

In comparing this method with the mist method it becomes apparent that the size and weight of droplets is the governing factor. Referring to the falling time of various sized droplets—Journal of Economic Entomology, Vol. 39, No. 6, Dec. 1946, it states that a 200 micron droplet requires 13 seconds to fall 50 feet. Less than 3 miles per hour of air will keep this sized droplet in forward motion. A 30 micron droplet which can contain enough chemical for a residual deposit requires approximately 10 minutes to fall 50 feet. A little over 1/17 of a mile per hour of air will keep this sized droplet in forward motion. And a 1 micron droplet requires 5 days to fall 50 feet.

It may be well to call attention at this point that a 1 micron droplet of some chemicals can be toxic to plant or animal life, therefore an understanding of the buoyancy of droplets becomes necessary to regulate the range of a concentrate or mist type sprayer. It has always been the contention of this writer that many of the mist sprayers now being used for street row or unit shade tree

(Continued on Page 18)

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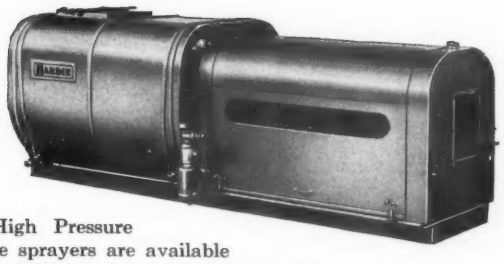

Hardie High Pressure
shade tree sprayers are available
in both standard and custom-built models.

Atomized Mist or Drenching Spray . . . *BOTH* by Hardie

Hardie gives you a concentrate mist sprayer that provides shade tree pest control at its most modern best.
And Hardie gives you high pressure sprayers delivering 35-60 gallons per minute at pressures up to 800 psi. for solid stream spraying of the tallest trees.

The new Hardie Concentrate Mist air blast sprayer delivers the chemical mist on an air stream of 10,000 cfm traveling at 135 mph. Powered by a 31 H.P. engine, atomizing the concentrate at 300 pounds pressure, with rotating fan housing, and turn table, the Hardie Concentrate Mist Sprayer assures quick, complete, labor saving shade tree pest control at all times and in all places.

Write for complete specification data.

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NAA NEWS

By PAUL E. TILFORD, *Secretary*
Box 426, Wooster, Ohio

Controls

We are entering a period where rigid controls will govern most all business activities. Regulation during the period ahead to meet the needs of the defense effort, apparently before the year is out, will be about as strict as during World War II when we were under complete mobilization. The purpose of controls in effect and planned is to put the needs of the defense effort first, but, barring all out war, to keep the civilian economy on a fairly high plane.

We are at this time operating under Price and Wage Freeze orders and a priority system.

Price Freeze.—Tree-care services are covered by The General Ceiling Price Regulation and the maximum price which now can be charged is the highest price charged for these services by the individual or company during the base period of December 19, 1950, to January 25, 1951.

Some interpretations are necessary before it is known just how this general price freeze is to be applied to all tree-care services. Many services were not sold and therefore were not priced during the base period. Practically no spraying, for example, and very little transplanting and fertilizing was done by arborists in the north from December 19 to January 25.

During World War II the "Dusting or spraying of trees, bushes or plants" and "Tree surgery—fees charged for" were exempted from the General Maximum Price Regulation. There would seem to be justification for similar actions with respect to the present price freeze, but we will have to wait and see what relief can be obtained. In the meantime the regulation is in effect and for those services not priced during the base period, the charge probably should not be substantially higher than was made last year.

Wage Freeze. — Wages were also frozen as of January 25, 1951. However, there are provisions whereby wages can be raised under some circumstances, if it is desired to do so. A cost-of-living increase up to 10 per cent of the average pay level during January, 1950, can be made, unless such an increase has already been made. Promotions with an increase in pay, merit raises and length-of-service increases can be made, if they follow a pattern which has been in effect in the individual company in the past.

N.P.A. Reg. 4.—National Production Authority Regulation 4, issued February 27, provides a priority rating for the obtaining of Maintenance, Repairs and Operating Supplies for most every type of legal business and service. Every business enterprise is automatically assigned this rating for Maintenance, Repairs and Operating Supplies.

To use the rating, write on the order or on a separate piece of paper attached to the order for MRO supplies the following symbol and statement: "DO-97, Certified under NPA Regulation 4." Suppliers from whom MRO supplies are obtained request that your order carry this rating because they need the rated orders to replenish their supplies.

The rating can be used only to obtain the same quantity of MRO supplies purchased last year. The quota of such supplies any business is entitled to may be figured on a quarterly or yearly basis. If the rating is used, all MRO supplies purchased must be figured in the quota regardless of the fact that some supplies may have been purchased without use of the rating. The National Production Authority requires that all persons using the DO-97 rating must keep complete records of their purchases and preserve them for the duration of the regulation and two years thereafter. Any system of bookkeeping or accounting is satisfactory, if it will disclose the needed information concerning purchases of MRO supplies.

Paul E. Belcher in Volume 7, Number 67, of Business Analysis, published March 15, by the First National Bank of Akron, made this significant statement: "The government has hardly begun to tighten the screws. Worse than that, the hope of returning to a peace time existence is not rosy for the next decade. We may be compelled to live under the controls of a garrison state for the better part of a generation. While this period lasts, may we never forget that this nation grew great in an environment of individual liberty and free enterprise!"

Few Tree Removals Produce Wood Worth Salvaging

Economy-minded householders find it diffcult to understand why few trees removed from their properties have salvageable wood. In three out of every four removals, trees are hauled away to a dump for destruction by burning.

Owners imagine any saw mill would be delighted to get the trees. All too often, however, such trees are diseased, hollow or decayed and contain little usable wood, points out M. W. Staples, field supervisor of The Davey Tree Expert Co. Even healthy trees from city or roadside are not acceptable to mills. Expensive saws can be ruined by nails, hooks, cables or cement fillings frequently found in such trees.

More often, the home owner wants fireplace wood. Even when this wood is sawed to size and piled in the back yard, there is still the problem of carting away branches. A heavy percentage of removals are of elms, which are only fair as fire wood. When freshly cut, elm has a large amount of water and refuses to burn unless skilfully blended with fast burning varieties. In the Dutch elm disease zone the cut logs may breed beetles to spread further contamination unless treated. Fire wood salvage is worth while only when there is a substitute tree of desirable kind, such as oak, sugar maple or hickory.

Tree removal is ticklish business at best and the home owner will be wise to contract with a responsible outfit. Among the more important things the owner can do is require evidence of proper insurance coverage. Otherwise he may be liable for injury to the crew or to passersby, as well as for damage to his own and neighboring properties. He should also make certain the contract includes hauling and disposal of the tree.

Van Wormer Is President

Under the sighing palms of the sun-drenched shores of Palm Beach, Fla., a notable Virginian, H. M. Van Wormer of Richmond was elected President of the Southern Shade Tree Conference last month. Serving with Van, as Vice President is Hackett Wilson of Shelby, North Carolina. Harry Scott of Lookout Mountain, Tenn., is the new Secretary-Treasurer.

Attendance was in the neighborhood of 100 and included were a number of snow-dodgers — Dr. and Mrs. Louis Chadwick, Mrs. Zel Thompson, Mr. and Mrs. Larry Wachtel, Mr. and Mrs. C. D. Wolf and Dr. Paul Tilford. The papers and other technical phases of the program were well selected and timely and were well received by the delegates. Good weather prevailed as usual in this bastion of sunshine and winter frosts.

18th Western Shade Tree Conference—Portland, Ore., June 27-30

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Pennsalt's Whitemarsh Laboratories are devoted exclusively to research, constantly improving present Pennsalt products and developing new ones.

3 CONTROLLED MANUFACTURE
All products bearing the Pennsalt name are produced according to strict specifications, by skilled workmen using modern equipment.

PENN SALT
agricultural chemicals

PROGRESSIVE CHEMISTRY FOR OVER A CENTURY

WHEN you buy Pennsalt insecticides you may be sure of consistent high quality, because Pennsalt literally manufactures these products from the ground up . . . manufactures many of the basic chemicals as well as the finished insecticides that go into your spray tanks. This start-to-finish control, together with Pennsalt's research and testing facilities, offers you a combination hard to beat.

Visit your Pennsalt dealer. You'll find him eager to help you . . . or write direct to Agricultural Chemicals Department, Pennsylvania Salt Manufacturing Company, Philadelphia 7, Pa.

PENNSALT PRODUCTS FOR ARBORISTS

PENNSALT DDT EMULSION CONCENTRATE 34—emulsifiable solution containing 34% DDT—3 full pounds of DDT per gallon. Lower solvent concentration reduces burn problem when used in recommended mixtures. Uniform water emulsion controls many insect pests on shade and ornamental trees. Can be used in hydraulic or mist concentrate machines.

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PENNSALT HI-GAM® E-20 (lindane) • PENNSALT DDT WB-50®

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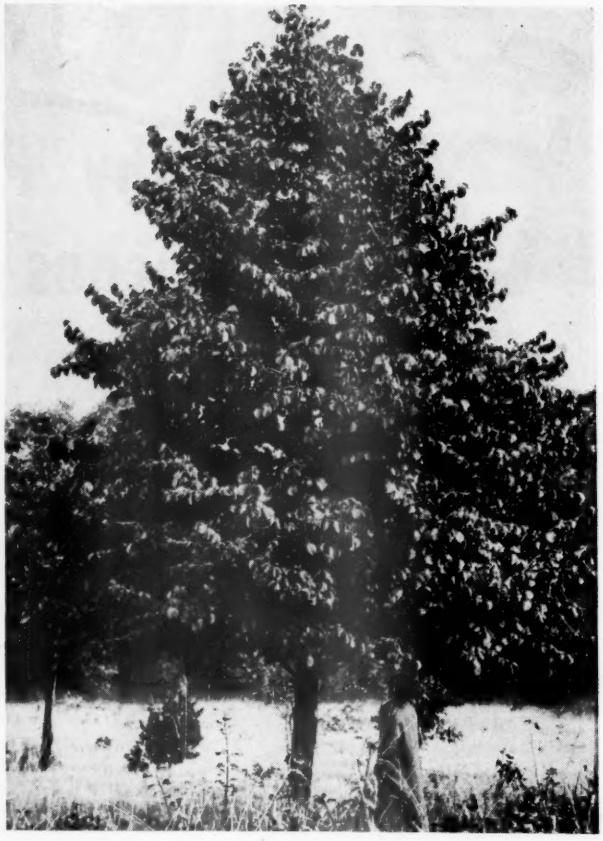
City_____ Zone_____ State_____

Turkish Hazel Is Shapely Selection



A tree of great beauty of form and foliage is the Turkish Tree Hazel (Corylus coluna). Also on the credit side of this crisp beautiful tree is the delicious hazel or filbert nut. As the pictures show the tree has a fine pyramidal form and it is believed that, in this country, it will attain a height of about 60 feet. It is hardy in Zone 4.

The specimen pictured here is about 15 feet tall and only nine years old. This fine exotic has been sent to the Shade Tree Selection Committee of the National Shade Tree Conference by Mr. H. H. Corsan of Hillsdale, Mich. Mr. Corsan is a nut tree specialist and is growing many other fine nut species, however he considers the Turkish Hazel about his finest tree.

The tree hazels, there are three other species, the American (C. Americana), the European (C. Avellana) and the Chinese (C. Chinensis), do best in deep rich soils but with moisture will thrive in most types of soil. The bark of this tree is a rich gray and corky. The foliage breaks early in spring and remains 'till late fall and is not damaged by early or late frosts.

The Turkish Hazel should make a beautiful tree for lawns and yards and even as a street tree. As a street tree it should be used, because of the fruit, on a "treelawn" if at least twelve to fifteen feet in width to avoid the dropping of fruit on sidewalks.

Rather unusual is the planting method recommended by Mr. Corsan in handling the Turkish Hazel and Filberts, it follows:

First set a stake marking the location where tree is to be planted. Then dig half-moon shaped holes on two opposite sides of the stake, leaving a saddle of undisturbed earth with the stake still standing on its crest. Remove stake, skim off two inches of earth from crest of saddle and set tree astride where the stake had been. Fan out roots as widely as possible on sides of saddle, taking care that all roots are pointing downward. The sides of the saddle should slope at about a 45-degree angle. Fill in with top soil and tamp well. Then to brace the tree against wind, erect a 6-inch mound of earth about base. This mound should be maintained for two growing seasons. Later train your filbert as you would a peach tree. Remove all suckers that may form at base of tree as soon as they appear.

E. H. S.

Pennsalt Issues New Bulletin On Spraying Trees Safely With DDT

Pennsalt's Agricultural Chemicals Department has just issued a new service bulletin describing safe methods of spraying shade and ornamental trees with DDT emulsion concentrate.

Many trees that can tolerate DDT are, under certain conditions, susceptible to leaf burn from the solvent with which the insecticide is mixed. To gain the benefit of DDT's effectiveness with safety to trees and shrubs, the amount of solvent applied to a specific leaf surface area must be controlled. The new bulletin, Pennsalt No. 201, gives in tabulated form for quick reference and ease in following directions a list of the host trees, the insect pest causing damage, the amount of spray to be used and special instructions on how it should be applied.

The booklet is available on request by writing the Agricultural Chemicals Department, 1000 Widener Building, Philadelphia 7, Pa.

PLANT AMERICA—WISELY

You Can't Beat A HOMELITE One Man Saw

We really mean it. When it comes to cutting a tree faster and easier, a Homelite Gasoline Chain Saw is the light-weight champ of the woods. It's the one-man saw that does the work of other two-man saws. Whether it's notching, felling, bucking or undercutting, the complete ease in handling a Homelite and the great speed with which its narrow kerf blade flows through wood, are real pleasures to the experienced woodsman.

One try at cutting with a Homelite will thoroughly convince you that it is the saw that you will use and recommend to everyone from here on.

STICK TO THE RULE OF THREE AND YOU'LL ALWAYS STICK TO A HOMELITE

1. PERFORMANCE The high, steady power of the famous Homelite engine, driving the special permasharp chain, gives you unsurpassed cutting performance.

2. DEPENDABILITY A Homelite Chain Saw's dependability has been established by Homelite's quarter century of building more than 285,000 gasoline engine driven units.

3. SERVICE Forty-eight factory service branches located throughout the country are completely equipped and instantly ready to keep your Homelite Gasoline Engine Driven Chain Saws always on the go.

Send for free bulletin on HOMELITE One Man Gasoline Engine Driven Chain Saws

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Wise Old Owl says:

"Neglect is the worst abuse a chain saw can get. In ordinary times, the worst name you could call that would be *waste;* now it's a downright crime. Saws are already in short supply; parts hard to get. Figures show that approximately 70 percent of repairs to chain saws are caused by *damaged*—not worn out—parts. Most of this damage can be prevented. What can I as a chain saw owner do? It's as simple as one, two, three:

1. **KEEP IT CLEAN.** Every day I clean the sawdust, leaves and muck from my machine.
2. **KEEP IT OILED.** Regularly, and according to the book.
3. **KEEP IT SERVICED.** I watch my saw the way a mother watches her child's behavior. A bolt tightened in time may save many days in the repair shop.

"Works, too. My four-year-old Disston still cuts as much wood as it did when it was new."

JOIN IN DISSTON'S GREAT NEW FIGHT WASTE PROGRAM

The times are serious. We don't know what lies ahead. But we do know there will be increasing shortages of strategic materials. At the same time there will be an increasing demand for chain saws and for forest products of all kinds. This means that, as new chain saws become hard to get, your old saw becomes more and more valuable. You will be helping your country and yourself by fighting waste *now.* How? It's really very simple. Follow these two easy steps . . .

MAINTAIN YOUR CHAIN SAW. Disston makes available—absolutely without cost—valuable preventive maintenance booklets and check-up charts. Follow these and you'll have a minimum of trouble. Send for your free copies today!

SERVICE YOUR CHAIN SAW. Disston Dealers are cooperating with the Fight Waste Program. They are located at strategic centers near you, and they are chain saw experts. You will save time and money by making a practice of bringing your chain saw in regularly for a check-up. These specialists can spot little troubles before they become big and expensive troubles . . . can help you get the most out of your chain saw.

HENRY DISSTON & SONS, INC.

8D TACONY, PHILADELPHIA 35, PA., U.S.A.

In Canada, write: 2-20 FRASER AVENUE, TORONTO 3, ONT.

Mist Spray

(Continued from Page 12)

spraying are entirely too powerful for this work when employing their full force of air delivery. Many of these machines are capable of controlling insects for a distance of from 200 to 500 feet through full foliaged forest trees. The use of concentrate spray machines by the agriculturist is bringing this fact home to a great many people who used to insist that unless the foliage in the top of a tall tree was in violent agitation no spray material was reaching that far. They are also beginning to realize that enough spray to control pests is not always visible even at short distances from the spray nozzle provided a high concentrate is being used.

The acquirement of this knowledge has brought forth some protests against the use of airborne spray in thickly populated places. There would seem to be some justification for these protests as long as the high powered machines are used at full force. Operators and owners of mist sprayers must not be sold by their clientele to use the full force of their machines for its psychological effect but rather be prepared to demonstrate to the client the effectiveness of invisible spray.

A simple way to do this is to blow a puff of smoke, from a cigar or pipe, into the air and watch it disappear. Call attention to the fact that the visible smoke is made up of small carbon particles approximately ½ micron in diameter and that even though the smoke has vanished visually the carbon still exists. The chemical used in spray mixtures is a solid and droplets of 30 micron diameter are not visible for great distances from the spray nozzle yet carry enough chemical for a residual deposit. Associate this with the fact that 1/17 of a mile per hour of moving air does not create violent agitation and the client will have a better understanding of mist spray. All spray materials used for insect control are toxic and care must be exercised in their use. If the mist sprayer is thoroughly understood the proper use of this machine will be less hazardous than the use of a hydraulic sprayer where large quantities of the spray material drip from foliage to ground and some times runs in streams along the gutters and driveway.

This account of the large mist sprayers does not mean that it cannot be used for unit shade tree work, but it does mean definitely that air sufficient to penetrate to a depth of 500 feet into a forest is neither necessary, economical or practical for spraying a street tree of from 20 to 60 feet in height.

On a trip through Canada this last

summer two fruit growers were found using mist spray in their orchards with satisfactory results. This means that they were spraying one complete row of trees at a time with a highly concentrated spray mixture instead of a half row with the low concentrate mixture. However it was generally agreed in this country by scientists and manufacturers alike, that the low concentrate method would be much safer in the hands of the beginner.

What place the low concentrate method has in the field of arboriculture leaves room for speculation and the arborist should be forewarned that the low concentrate mixtures will not control at the same distance with the same amount of air as the high concentrate mixtures.

Thus a simplified explanation of the difference between low concentrate and high concentrate mist spray would be to say that low concentrate spray is applied by the use of high velocity droplets traveling in a straight line into the foliage requiring turbulent agitation of the foliage to assure proper coverage on the upper and lower sides of the leaf.

Mist spray is the use of a high concentrate mixture broken up into small buoyant droplets and of a consistency to adhere to the foliage. Violent agitation in the foliage is not necessary with this type of application as the air in and around the tree becomes permeated with the spray droplets which, even though small, contain sufficient chemical for a residual deposit and being of a proper consistency to adhere are deposited on all sides of the foliage and tree bark.

Spraying by the airborne chemical method has proven to be much more economical and in many instances has controlled pests better than the hydraulic or bulk type spray.

In view of the fact that university and college service departments are now working energetically toward the greater development of airborne spray the time has arrived to become enthusiastic over prospect for the future.

This writer hopes that in the near future, that some of the university workers will contribute a more professional approach to this humble effort on the subject.

Czechs Plant 16 Million Trees for Silkworms

Prague — Sixteen million mulberry trees, important in silk culture, were planted in Czechoslovakia last year and the country now has 40,000,000 of them, the weekly "Hospodar," says.

They are expected to number 100,000,000 by the end of the 1949-53 five-year plan. The leaves are food for silkworms being raised to lessen the dependence of Czechoslovakia's silk industry upon foreign sources of raw material.

Time-tested protection for America's beautiful shade trees

Two Shell insecticides with a proved control record:

SHELL RESITOX D-25 Economical to use, fast acting, and effective for long periods . . . Shell Resitox D-25 controls a wide variety of destructive insects. This product contains 25% DDT in a highly refined aromatic petroleum base. It emulsifies readily in concentrations suitable for either conventional water spraying or mist-blowing equipment.

SHELL VAPONA 1D-045 This oil mist insecticide is now a favorite for shade trees and ornamentals.

Shell Vapona 1D-045 is a refined horticultural base oil containing DDT and exceptionally low in aromatic hydrocarbons. It contains no inert ingredients . . . is applied undiluted as a concentrated mist from ground or aircraft atomizing equipment.

Both of these dependable Shell insecticides have a fine record for controlling gypsy and brown tail moths, tent caterpillars and other lepidoptera, sawflies, leaf beetles, the elm bark beetle (vector of Dutch elm disease) . . . and other pests for which local Extension Services recommend DDT.

See your local representative or write for further information.

SHELL CHEMICAL CORPORATION

CHEMICAL PARTNER OF INDUSTRY AND AGRICULTURE

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Japanese Beetle

(Continued from Page 10)

8/7	22
14	28
21	16
28	39
9/4	31
11	6
Total	406

In preparing the envelopes before the actual control campaign begins, the former year's list of persons who obtained traps was carefully checked to determine those who turned in a satisfactory report. When an inferior record was disclosed, the off-duty fireman was instructed to select a new person in that particular area in the hope that a better record would be obtained for the coming season. With permission, a trap was again left at the home of the individual who turned in an accurate report for the former year.

After the season is over, the traps and rods are returned, cleaned and stored for another season.

The cost of placing, recording and retrieving Japanese Beetle traps for the year 1950 is as follows:

	Cost per Acre
Clerical work	$0.02480
Eleven postal cards per trap	0.00713
Envelopes and Paper	0.00843
Liquid beetle bait for traps	0.03530
Extra pint fruit jars	0.00048
Labor placing traps	0.01430
Labor retrieving, cleaning and the storing of traps	0.01835
Lost or destroyed traps and rods	0.00388
Depreciation 1/10	0.00972
Total Cost Per Acre	$0.12239

It is known that Milky Disease (Bacterium Bacillus Popilliae), a biological control disease, will last four years in the carcass of the Japanese Beetle larvae in the ground. In 1944, East Cleveland placed Milky Disease in an extensive park system and in 200 lots evenly distributed over the area of the City. A teaspoonful of the commercial Milky Disease product was placed in the ground of the lot at each location, 4' center to center in both directions by the use of an automatic corn planter.

The General Electric Company's Nela Park's spacious grounds were treated by the General Electric Company with an even spread of lead arsenate and Milky Disease at about the same time. The difference in results between the over-all City results and that of Nela Park's effort is found in Exhibit No. 5.

The State of Ohio, under the direction of Dr. Joseph B. Polivka, also placed Milky Disease in various parcels of land including schools, hospitals and some private property locations at the same time.

Some of the Milky Disease was given to the City by the State of Ohio; some was purchased from J. A. Ditman — Laurel, Maryland.

Other city locations were treated with lead arsenate, at the time, to maintain the grass such as a bowling green and public lots in front of buildings. The results of these treatments are plainly seen in Exhibit No. 5.

While the City experienced a low over-all count in 1950, outside areas ten to twenty miles away experienced the heaviest infestation seen by Dr. Polivka who assigns our low count to the spread of the Japanese Beetle Milky Disease placed in 1944 in our city.

Dr. Polivka found in samples taken in the City that 16% of the larvae were affected with Milky Disease in 1948 and from 50 to 60% affected in 1949.

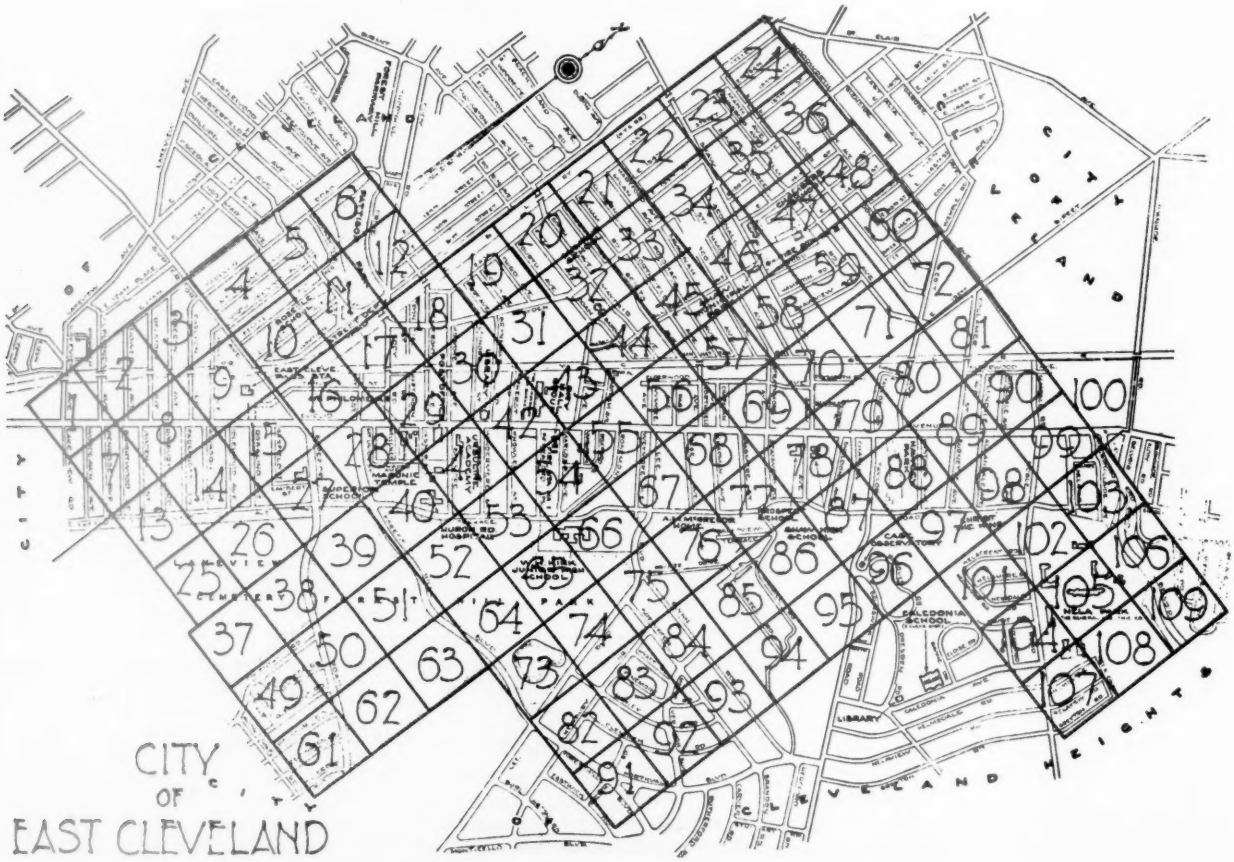


Exhibit No. 6 shows the average emergence by the week during a season in the City.

Exhibit No. 7 is a map of the City of East Cleveland, Ohio indicating the division of the city into areas approximately 900 feet by 900 feet. This map shows where to place a trap and help to systematize the record. Contour lines can be placed on this map showing various totals of bugs caught by the week or season to see how they are moving in or out of the city or over the city per week or year.

The results were gratifying to all concerned.

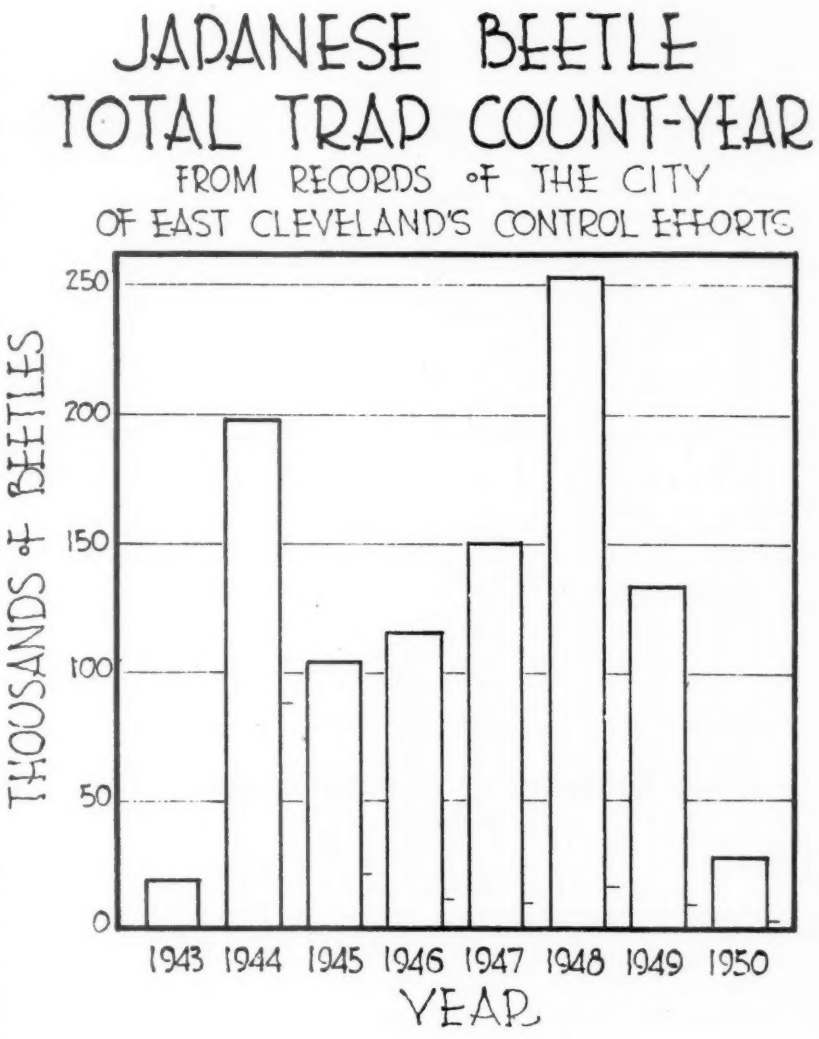
It is hoped that the disease will spread out from the city and stop migration. Dr. Polivka, through the use of fluorescents, found that the greatest distance that a beetle travels during his life time was about 1/4 of a mile. Through the travelings of the larvae, the beetle's natural flight together with the work of birds, the Milky Disease is spread over and outside the City in the course of time as shown in Exhibit No. 5. Milky Disease will not injure animals or birds, only Asiatic beetles.

The statistical information obtained each year is sent to Dr. Polivka as additional material in his work on the beetle to use as he sees fit.

As the moisture content of the ground — temperature, etc — excluding the Milky Disease — affects the number of beetles and time of emergence, there will be a variance in the record from time to time.

All of the people who accepted the traps and patiently supplied the statistical record, the past few years, have been extraordinarily generous.

Gratitude is extended to Dr. Joseph S. Polivka, Mr. Charles F. Irish, Mr. J. B. Herman of the General Electric Company's Nela Park and friends who have helped me in this work tremendously with suggestions, comments and participation.



Stumps No Longer Stump Maplewood Park Director

Removing stumps from carefully landscaped parks or lawns no longer stumps Richard Walter, Director of the Park and Shade Tree Department of Maplewood Township, N. J.

Walters has a unique method for removing all traces of a stump without the turf being torn up by trucks or bulldozers.

It's quick and simple.

When a tree is to be removed, Walter's crew fells it quickly with a heavy-duty Disston two-man chain saw. Then his crew makes another cut on the stump. this time almost flush with the ground.

"We're able to give the guide rail on the Disston a half-turn that takes the cutting teeth right into the base of the stump. When the cut is finished, only an inch or so of stump remains above ground."

At this point Walter's new technique is called into play. Using a specially fitted two-inch drill, powered by a Stanley heavy duty electric motor with reversible switch, he bores holes in the stump two to three inches apart and about six to eight inches in depth. To overcome the tough grain of the stump, Walter uses a wood bit with an inverted cutting edge. With this bit holes can be drilled at the rate of three per minute. Well "honeycombed," t he stump is then easily chopped out to a depth of ten inches with a pulaski axe.

The hole is then filled in with top soil, grass seed planted, and in a short time all evidence that a tree had ever grown on the spot has disappeared.

Stumps up to thirty inches have been cleared and filled in under six hours.

"Drilling holes in the stump takes pressure out of the wood," explained Walter, "and gives the axe a chance to do its job. The method is completely satisfactory and I recommend it to park men, arborists and others who engage in stump clearance."

Patronize the Advertisers. Mention TREES

Jack Kenealy Saves A Tree

By JACK KENEALY,
Tree Warden, Ardmore, Penna.
(Ed's. Note: Picture illustrating this story appears on the cover.)

The natural beauty of this section of the country has played a very important part in its desirability as a location for home and high-class residential areas. A large portion of this beauty comes from the roadsides. In an area such as ours, attractive roadsides are essential.

During the past few years the construction boom and the tremendous increase in traffic, the maintenance of roadsides and the preservation of existing trees, has become a full-time job. It compares quite favorably with being a country doctor in that we never seem to catch up.

I have been hard-headed, I know, but, it has been difficult for me to give in to a lot of this alleged progress, which is slowly and surely going to destroy us. But, I suppose I may as well admit the automobile is here to stay and as a direct result, streets will have to be wider and trees will have to be removed.

One of our recent jobs was the rebuilding of Bryn Mawr Avenue, Bryn Mawr, Pennsylvania. This was one of our older streets connecting the Bryn Mawr business district and the Lincoln Highway with several southern routes. To add more to the confusion, our only hospital, which has been expanding, is located along this street. Since the road was only twenty-four feet wide, the traffic situation was impossible.

The State Highway Department, Township Department and the County made a very thorough study and came up for approval with a plan they felt was the proper answer to accommodate traffic, and one side parking, which was essential. This plan when referred to us, caused considerable unhappiness to say the least. It appeared as if the trees were to get no consideration whatsoever. The new plan called for a thirty-eight foot cartway which would mean sacrificing many fine old trees. Some of the Sugar Maples were the finest I have ever seen.

It was only natural that a plan of this sort would cause excitement in any area where value is recognized. We did our part to add fuel to the fire and tried without success to get the cartway narrowed, however, we did get other changes and managed to save some of the trees.

Our own Highway Department has always been cooperative and are not too quick to destroy trees. It is through their cooperation that money was available for replanting. I am sure that I am fortunate in having the type of men to work with that we have in our Highway Department. This is more apparent when you come in contact with the representatives of other interested agencies on these aid jobs. So far as I can determine, our State Department is interested only in the traveling public. Concrete is unrolled in a straight uninteresting line and replanting and roadside development is only a subject for discussion. Trees are always referred to as "a damn tree" and is something in the way.

In spite of all the opposition you can't give up, and, as evidence of effort, the tree in the picture is just one of the possibilities of not only saving trees, but, the usefulness of trees. This beautiful Elm was in the radius of this very busy Lincoln Highway intersection. It was in the way and would be removed. This was too much to take without a fight and after weeks of discussion and a total lack of sympathy from me, the engineers arranged a conference on the job, and, while they were explaining why the radius had to be just so and why this inlet had to be here and something else had to be over there and so on, I borrowed the scale one of the gentlemen had in his pocket and marked the island on the pretty plan. Frankly, I expected at least a dozen reasons why this would be bad. For the next couple of minutes you could have heard a pin drop, they not only agreed but were enthusiastic. They agreed that it would improve the traffic situation. Again through the cooperation of our own Highway Department, additional right of way was obtained and the tree was saved.

During the course of the construction, root cutting was held to a minimum and the road building machinery responsible for so much mutilation was not used. All the excavation was hand labor. The tree was fed and on the completion of the construction was carefully pruned. As time passes this Elm looks perfectly happy and is reigning over Bryn Mawr like the Queen it is.

National Arbor Day
"The Last Friday in April"

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WEST CHESTER, PA.

Complete Line of Arborists Supplies:

LAG HOOKS, CABLE, WOOD SCREW ROD,
PRUNERS, POLE SAWS, POLE HANDLES, ROPE,
TWINE, SAWS, CHAIN SAWS,
POWER SPRAYERS, INSECTICIDES, ETC.

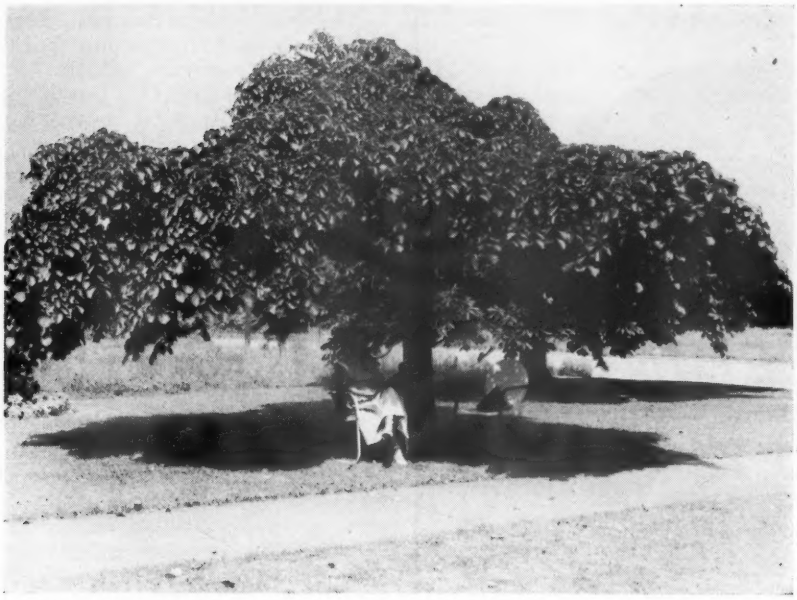
BIG TREE MOVER
Handles up to 12-inch trees.

- √ "Rocks back" for easy loading and unloading.
- √ "Rocks forward" for balanced load.
- √ Two sizes . . . fits any standard truck chassis.
- √ Superstructure removable for other truck use.
- √ Proved in use for years by nurseries and park departments all over the United States.

Write for detailed specifications and prices. Sold on terms if desired.

Williams & Harvey Nurseries
P. O. Box 7068, Country Club Station, Kansas City 2, Mo.

Camperdown Elm—A Useful Small Tree



Here is a tree that has always been looked upon as a freak to be planted in a cemetery, or as in the gay 90s as a front lawn companion piece to the iron deer or dog. This unfortunate custom has resulted in a fine small tree being ignored where it should have high consideration on a use basis.

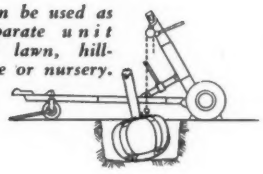
While we have seen Camperdown elms with a spread of 45', this is very unusual. Of greater importance, in considering a tree for a small yard, or to be used in conjunction with a low or rambling house, is the fact that the tree seldom or ever attains a greater height

(Continued on Page 24)

Tree moving is profitable with the new

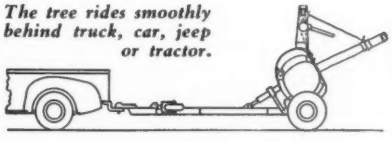
Continental TREE MOVER

Can be used as separate unit on lawn, hillside or nursery.



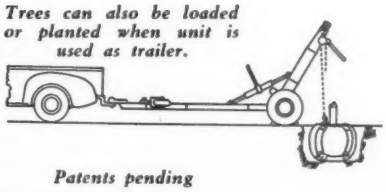
- **Easy to operate**
- **Versatile**
- **Efficient**

The tree rides smoothly behind truck, car, jeep or tractor.



Adjustable sling is quickly attached or removed. Capacity — 52-in. ball or 3,000 lbs.

Trees can also be loaded or planted when unit is used as trailer.



Patents pending

Herman F. Beseler
253 Plymouth Bldg.
Minneapolis 2, Minn.

KILL INSECT PESTS with IRON AGE MIST SPRAYERS

Users everywhere praise the performance of Farquhar Iron Age Mist Sprayers on golf courses, parks, playgrounds, swimming pools, tourist courts, picnic grounds, and other places where insect pests are a problem.

Here are the outstanding features of the Farquhar Iron Age Model 125: 22 hp, 4 cylinder Wisconsin engine drives sturdy cast aluminum axial flow fan at 87% efficiency, delivering 6,000 to 11,000 cubic feet of air per minute at 90 to 125 mph. New, efficient spray jets meter *exactly* the right amount of mix, either oil or water, to center of high velocity air stream, insuring complete misting of concentrate. Spray jets can be changed quickly to alter droplet size. Turret rotates 360° for full control of air blast. 125 gallon tanks are available with trailer or skid mounting. Comfortable spring seat for operator.

Find out *now* how Farquhar Iron Age Mist Sprayers can make your pest control program *far more effective at less cost.*
Write A. B. FARQUHAR COMPANY, 3522 Duke St., York, Penna.

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MANURE SPREADERS • CONVEYORS • JUICE PRESSES

PLANT AND SPRAY THE IRON AGE WAY

IT'S TREE FEEDING TIME

DO IT THE EASY WAY

WITH Wilson's O. K. 12-12-12 WATER SOLUBLE FERTILIZER

Feed your trees Wilson's easy, labor saving way by making your sprayer do most of the work. Just dissolve 3 to 25 lbs. of O. K. Water Soluble Fertilizer in 100 gallons of water and apply with Wilson's special Tree Feeding Needle. Gives a quick watering and feeding down at the root level. Especially good in city work where sidewalks and roads hem in a tree. Contains correct proportions of Calcium and Magnesium as well as the important "trace" elements Manganese, Copper, Zinc, Iron and Boron.

25 lbs. $6.00; 50 lbs. $9.20; 100 lbs. $16.00.

F.O.B. Springfield, N. J., or delivered in areas serviced by our trucks.

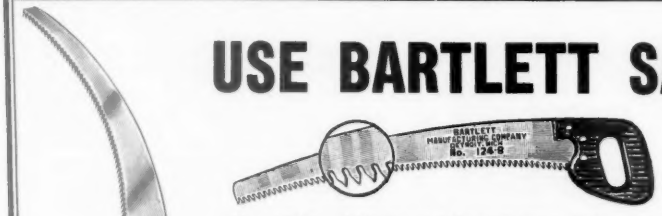
TREE FEEDING NEEDLE

A hollow steel tube, about 4 ft. long with a hard steel point having two transverse holes on the end. A cut-off valve is on the handle. Each $17.50

Andrew Wilson INC. HORTICULTURAL CHEMISTS

DEPT. W SPRINGFIELD, N. J.

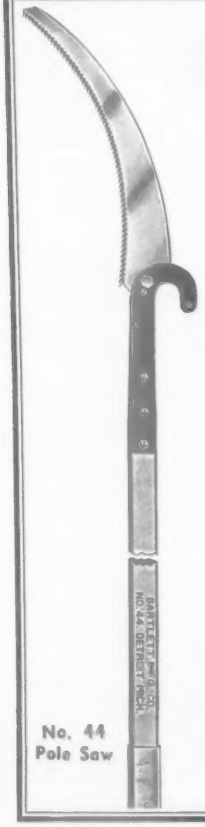
USE BARTLETT SAWS



No. 124B—24" Special Fast Cutting Utility Saw

No. 114B—26" Special Fast Cutting Utility Saw

No. 114—26" Rapid Cut Saw (Snap Extra)



No. 44 Pole Saw

No. 45 Pole Saw

TREE SURGERY SUPPLIES

TRADE MARK CONTROUND

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South Pasadenans Protest Removal of Giant Oak

Residents of South Pasadena's Edgewood Drive are determined that the city shall "spare that tree."

Hearing from official source that the giant oak in the middle of the street was scheduled to come out this morning, housewives, children, pets and a few husbands, who postponed going to work, gathered to form a "protective body" around it.

The tree's removal had been ordered by the City Council about a month ago, despite full-house protest. After the official decision, described as based on "elimination of hazard" and to facilitate street improvement, the residents continued their protests with letters and telegrams.

Edgewood Drive, they said, had never had an accident. The fire chief told them his equipment could get through by eliminating some parking and trimming some limbs. Tree experts told them it was an exceedingly healthy tree.

"We have decided if that tree comes out, it will have to be done over our heads," Mrs. E. C. Sterling, who lives at 2061 Edgewood Drive, declared. "We'll sleep by it if we have to."

When the removal had not been started at the end of an hour, Street Superintendent Glen Garwood was contacted. "Why, we weren't going to take that tree out today," he said. "I don't know just when we'll take it out —just whenever we get around to it."

Esther Holderness,
Pasadena, Calif.

Camperdown Elm—A Useful Small Tree

(Continued from Page 23)

than fifteen feet. This is one of its finest qualities. It has long been the contention of the writer that here is a tree that required imagination upon the part of tree users before it could be put to a very useful purpose.

Last summer while driving to the National Shade Tree Conference in Syracuse we came across a Camperdown that had been planted by someone with a fine sense of tree use. The tree had been planted at a bus stop and a bench placed under it for the use of passengers. Unfortunately it was too dark for a picture and the name of the town forgotten. If any reader knows of this tree please let the Editor know.

The Camperdown elm is a variety of Scotch elm, Ulmus glabra Camperdown. Posing in the above picture is Mrs. Editor.

Tree Climbing Contest Is Okayed

By Edward H. Scanlon, Chairman
National Tree Climbing Contest, National Shade Tree Conference

At a meeting last month of the Local Arrangements Committee of the National Shade Tree Conference held in Cincinnati it was decided to hold an annual Tree Climbing Championship contest. This is gratifying to many who have long felt that it would add some zing to our conference.

This contest, it is felt, should be a runoff of a series of sectional contests and is being arranged on that basis. Time is comparatively short to organize sectional contests but it is our belief that if we get the cooperation that the contest merits a fairly respectable show will result. At least the organization groundwork can be set for a smooth functioning contest in the future.

The plan set up to select contestants for the championship runoffs has been laid out as follows:

The president of each of eight sectional tree organizations has been asked to appoint a local chairman to serve on the national committee. This chairman will arrange a contest this spring or summer prior to the Cincinnati meeting August 27-31, to select a representative to compete in the national finals at Cincinnati. Contestants will be chosen from these organizations:

(1) Connecticut Tree Protective Association
John B. Woodruff, Chairman
764 Waterville St.,
Waterbury 12, Conn.

(2) Massachusetts Tree Wardens and Foresters Association
Fred Ralston, Chairman
22 Linden St.,
Allston 34, Mass.

(3) New Jersey Federation of Shade Tree Commissions
Carl Witte, Chairman
115 Clifton Ave.,
Newark, N. J.

(4) Ohio Chapter, National Shade Tree Conference
Karl Kuemmerling, Chairman
401 Cherry Ave., N. E.
Canton, Ohio

(5) Midwestern Chapter, N. S. T. C.
Richard P. Alman, Chairman
2925 Johnson, N. W.,
Cedar Rapids, Iowa

(6) Southern Chapter, N. S. T. C.

(7) Western Chapter, N. S. T. C.

(8) Canadian Chapter, N. S. T. C.

No chairman has yet been named for the last three organizations.

The rules under which the sectional and national contest will be conducted should conform in all details and the following, subject to suggestions for improvement, are submitted:

Three immediate past presidents of the conference will be invited to act as judges. They are Dr. Ray R. Hirt, N. Y. State College of Forestry, Ithaca; Dr. Curtis May, U. S. Dept. of Agriculture, Beltsville, Md.; and Norman Armstrong, Arborist, White Plains, N. Y.; We couldn't find finer judges and it is hoped they will accept our recently sent invitation.

Each sectional organization and the National Conference will take out an insurance policy to cover each contestant. The details of this will be worked out on the basis of the experience of the Connecticut, New Jersey and Western organizations where such contests have been held in the past.

(Continued on Page 29)

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Now is the time to outfit your men with
T-SHIRTS
with your emblem on them in two colors

$16.90 first dozen
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Ask for our catalog of summer pants and shirts in grey, jungle green and dark green.

FOUR TRAILERS—repossessed—repainted. Excellent **rubber** tires.
$175.00 to **$250.00**
($400.00 new)
They will last you for years.

PRUNER POLES—10 feet to 14 feet—**11c** a foot. 6 feet and 8 feet **$1.00** each. Does not pay to have less than a half-dozen shipped.

O U R BOOTS—the original Arborists boot in 16-inch and 10-inch lengths; pull on boots in 11½-inch and 16-inch lengths, made by Red Wing.

Extra wide back stay; Steel hooks—won't bend; Paint-can ring on side; Flaps are stitched to shoe to prevent twigs and bark getting under flaps.
Don't accept an imitation.

Now is the time to prepare your man to enter the National Tree Climbing Contest

Trade Name Sprays

(Continued from Page 8)

which are worth mentioning. VAPOTONE-XX Spray containing tetraethylpyrophosphate and VAPOPHOS Sprays containing parathion are very good materials for mite control, but being poisonous in nature have to be handled carefully and there have been some objections to the use around cities and dwelling areas. At the present time a new material is coming on the market called ORTHO-MITE containing Aramite or 88-R which is an excellent residual miticide, relatively non-poisonous to warm-blooded animals, non-toxic to bees and other beneficial insects and which is showing excellent promise as a general miticide. As the material becomes more available, its use on shade trees for red spider mite control can be increased. The material is adaptable for use in hydraulic or mist sprayers and is formulated as wettable powder, emulsive liquid and dusts to suit all types of application.

All of these products contain recommendations on the labels for special uses and in addition, the local dealers in various areas can give additional information on special uses of these products.

ISOTOX Sprays and Dusts, containing lindane, the new organic chemical insecticide, are also excellent for control of shade tree pests such as aphis, leaf beetles, boxelder bugs and some caterpillars. This material is also formulated in wettable powder, liquid and dust form and is adaptable to various types of application such as mist and hydraulic sprayers.

Fungicides

The old standby as a fungicide and one of the best shade tree fungicides ever developed is ZINC-COPOSIL Fungicide, which contains copper and zinc in tightly combined form leaving no free copper to injure foliage or plants, but being readily effective against the various fungus diseases. This material can be used in dormant or foliage application. It is best applied at the rate of 3 to 4 gallons per hundred and a small amount of oil on foliage or up to 2 gallons on dormant spraying is a good amount to use with it.

A new product which is showing excellent promise in plant disease control is ORTHORIX, a specially formulated liquid lime sulfur which has given excellent control of mildew, rust and black spot on roses and shows promise of control of other plant diseases such as peach leaf curl and is adaptable to various types of application. ORTHORIX could well be adapted to shade tree work.

Most of these materials are compatible with each other, except that caustic, basic or lime-containing sprays should not be used with any of the organics such as ISOTOX, VAPOTONE or parathion. An example of a spray combination that has been used very satisfactorily in Southern California is as follows:

Dormant applied to native Sycamores for control of Sycamore Blight and Scale, as well as various insect eggs and other pests:

Dosage: ORTHOL-K Medium Flowable Emulsion....2 gals. to 100
ZINC-COPOSIL
Fungicide .....3 pounds to 100 gal.
VAPOPHOS 25
Wettable .....½ pound to 100 gal.

This is applied at 500 to 600 pounds pressure for thorough application. The spring application when leaves are about half-grown is composed of ORTHOL-K Medium Flowable, 2 gallons; ZINC-COPOSIL, 3 pounds to the 100 gallons. A summer or late spring spray consisting of 1 gallon ORTHOL-K Light-Medium Flowable Emulsion; ZINC-COPOSIL Fungicide, 3 pounds; VAPOPHOS 25 Wettable, ½ pound has also been applied. This program is an example of a type that has been used successfully and that could be used in most any areas. With the new organic insecticide and phosphate insecticides now in use, it is wise to observe all label precautions and warnings with reference to protection to operators and to people in treated areas. These points are important and should be mentioned relative to uses of materials.

The new organic insecticides, however, are more effective than older type materials in that smaller amounts are required, they have residual life and other factors which favor their use. They can be adapted to shade tree work if proper label precautions are observed and proper information obtained relative to use from qualified agents of the insecticide manufacturers.

Wilson's Spred-O-Stik

By B. T. Thompson,
Andrew Wilson, Inc.
Springfield, N. J.

Staying "on the job" is a main requisite for success, whether in "holding a position" in warfare, keeping a job in industry or in any other form of human endeavor. This principle applies also to inanimate things. A motor must continue to function, the air must stay in the tire and *an insecticide must stay on the leaf to do its job.*

The tree worker should be especially concerned with the tenacity of his spray materials or at least most of them.

If he is using a stomach poison, such as lead arsenate he wants it to stick so the insects will have plenty of opportunity to eat it. Excessive run off is a waste of material and a lessening of insecticidal efficiency. The majority of arborists now use some form of sticker and spreader with lead arsenate and the tenacity of the insecticide is greatly increased by this procedure.

When it comes to the use of many of the proprietary sprays such as 50% Wettable DDT or other of the wettable powders, operators are prone to neglect the addition of a good sticking agent. The "wettable" powders as made by the

PRATT'S SPRAYS

FOR OVER 45 YEARS SPECIALISTS IN SPRAYING FOR HORTICULTURE

DORMANT OILS—Scalecide, the oldest and best-known dormant oil spray for shade trees. Contains a combination of vegetable and mineral oils for greatest kill and maximum safety to trees.

Pratt's Shade Tree Spray, a miscible, 96% highly paraffinic, superior-type oil spray for dormant spraying of deciduous trees and ornamentals.

SUMMER SPRAYS—Pratt's Summer Spra-oil, a miscible 97% white oil type summer oil spray for foliage spraying of deciduous and evergreens, also as a dormant spray for evergreens. **D-X Insect Spray**—One of the most effective, non-poisonous sprays for chewing and sucking insects. Contains pyrethrum, rotenone and piperonyl cyclonene. **Pratt's Nicotine Spray**—A contact insecticide containing 20% free nicotine. Used in the same way as nicotine sulphate. No spreader or sticker necessary.

Get Pratts Sprays from your Distributor. Write for bulletins "Pratt's Oil Sprays" also "Pratt's Sprays for Mist Blowers and Hydraulic Spraying."

B. G. PRATT COMPANY, HACKENSACK, N. J.
MANUFACTURING CHEMISTS

insecticide manufacturers have usually enough of a surface tension reducing agent to make them easily "wettable" but they do not include a "sticking" agent in their composition.

As a result, the "wettable" powders crystalize out of the spraying solution when the water carrier has evaporated, and then the toxic agent, such as DDT powder, is easily blown away by the wind or quickly washed off by rain. Thus is seen the need for some way to increase the *tenacity* of the applied material.

The best test for sticking qualities of any pesticide is to find out how many hard rains it will stand before not over two-thirds of it is washed away.

The Agricultural Research Administration of the U. S. D. A. at Beltsville, Maryland recently tested 110 proprietary adhesives made by various manufacturers. These were tested on glass slides for a total of eight rains. Fifty-nine were washed off entirely after the first rain. Nine disappeared after the second rain. Fifteen showed residual deposits of from 1% of the initial deposit up to 35% of the initial deposit after the eighth rain. The above resume of the test demonstrates the extreme variability among over 100 products sold as stickers and spreaders. Two of the products showing the greatest tenacity after eight rains (32% and 35% respectively of the initial deposit) were reserved by the department for further study.

To get the best efficiency it can be seen that a sticker and spreader should be selected with care and discrimination. The material you select should be equally efficient with dusts, wettable powders or liquid sprays. It should be homogenous. The sticking ingredient should not separate out and solidify in the can. It should not contain an excess of wetting agent thereby causing undesirable "run-off". It should not contain any chemicals that might be incompatible with the usual spray materials. It should not form insoluble calcium and magnesium soaps when used with hard water. It should mix readily with the other spray materials.

You may rest assured that the use of the proper *sticking* agent with any type of insecticide or fungicide will increase the kill, reduce the number of necessary spray applications and save money.

Benox Liquid Concentrate

For the Prevention and Treatment of
DUTCH ELM DISEASE
B. L. LEMKE & Co.,,
Lodi, N. J.
BENOX LIQUID CONCENTRATE is a convenient and economical

(Continued on Next Page)

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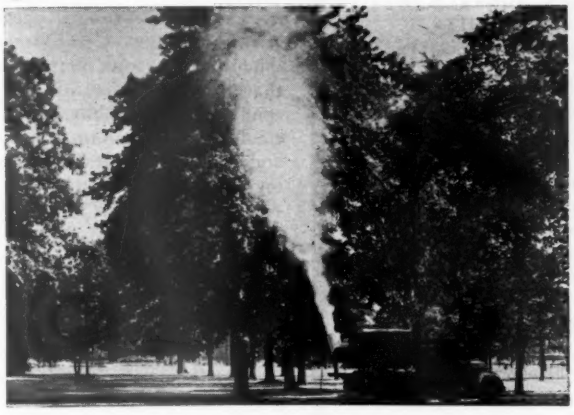


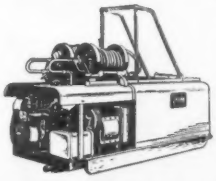
Better pest control for shade trees and parks because of Rotomist Controlled Performance

Rotomist will do a better job for you because it delivers atomized spray concentrate of the correct micron size, but at relatively low air velocities so there is no damage to trees. Rotomist accomplishes this by pre-atomization with a powerful auxiliary blower in a 240-mile-per-hour air stream. Then the controlled mist is delivered to the main air stream of lower velocity. With Rotomist you get maximum protection for the trees plus efficient use of spray material as the spray droplets get on the foliage but are not large enough to cause wasteful run-off.

Rotomist can apply dry dust, wet dust or concentrates and get thorough coverage over large area and into the tops of tall shade trees.

Easy, precise operation is made possible by Rotomist's hydraulic controls. Write for a free Rotomist folder for complete information.

• RANGER is your all-purpose sprayer



You'll find dozens of uses for a John Bean Ranger, an all-purpose municipal sprayer for weed, insect, brush and pest control. High-pressure hose on two drums makes it easy to spray in hard-to-get-at places.

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solution for the prevention and treatment of Dutch Elm Disease. The BENOX method—control by Chemotherapy—is based on the results of work conducted by Dr. Dimond of the Connecticut Agricultural Experiment Station since 1940. Dutch Elm Disease is caused by a fungus parasite known scientifically as Ceratostomella Ulmi. The fungus grows in the living tissue, that is, the portion of the tree which conducts water to the leaves. The principal visible symptoms consist of wilting and browning of leaves followed by dying of buds and branches.

BENOX LIQUID CONCENTRATE is available in 1-gallon, 4 x 1 gallon, and 50-gallon containers.

The Concentrate must always be diluted with 100 parts of water before use.

The ready solution is used at the rate of 5 gallons for each inch-diameter of tree at breast height.

The chart below shows the amount of Concentrate and the quantity of water to be added for trees ranging from 5 to 20 inches in diameter:

Elm Trunk Diameter	*Benox Liquid Concentrate*	*Water To Be Added*
5 in.	2 pints	25 gal.
10 in.	4 pints	50 gal.
12½ in.	5 pints	62 gal.
15 in.	6 pints	75 gal.
17½ in.	7 pints	88 gal.
20 in.	1 gal.	100 gal.

(1 gallon is equal to 4 qts. or 8 pts.)

The ready solution should be prepared shortly before use and not be stored for any length of time.

Application to the tree of the ready solution may be done by either of the two ways described below. The Surface Sprinkling method is the simplest one for which an ordinary sprinkling can may be used.

1. Surface Sprinkling:
   The solution is sprinkled on the surface of the soil over the feeding root area of the tree. In accordance with standard shade tree practice, the "feeding root area" is considered to be a doughnut-shaped area from the tips of the outermost branches in about half way to the trunk.
2. Sub-Surface Application:
   The ready solution is pumped under pressure into the ground at a depth of 18 to 24" beneath the surface of the soil. Space the injection holes every 3 to 4 feet over the feeding root area of the tree.

The Concentrate (BENOX) is comparatively non-toxic and non-irritating and needs no special precautions; thus it has no unfavorable effect on persons making the application or on plants or shrubs with which it may come in contact.

Cut costs, save time, do better work. Use electrical tools on every job beyond the reach of highline power. With electric hedge trimmers, grass clippers, saws, drills, hammers, spades, tampers and other electrical equipment, one man can do the work of several. *You can have electricity available anywhere* with Onan Portable Electric Plants. Mounted on dollies, Onan Electric Plants can be wheeled right to the job. Plenty of plug-in electric power is instantly available. Many lightweight A.C. and D.C. models—500 to 1,500 watts.

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A New Insecticide and Fungicide

A new insecticide that compares favorably with parathion with regard to pest control but is less hazardous to humans will be offered growers this year according to The Dow Chemical Company.

The product is Metacide, an organic phosphate compound, which Dow research workers state has offered good control in extensive field trials of a long list of pests including mites, aphids, scales, European corn borer, cabbage worm, Mexican Bean Bettles, and many other pests.

Since Metacide is a liquid and applied as an emulsion, the health hazards involved in handling a dust are eliminated. Dow toxicologists point out that this emulsion concentrate is not readily absorbed through the skin and that it washes off the skin more readily than parathion xylene emulsion concentrates.

Dow research workers state that Metacide is compatible with most insecticides and fungicides such as standard arsenate of lead, DDT, benzene hexachloride, chlorinated camphene, insoluble copper compounds, and sulfur compounds, but that it should not be used with any strongly alkaline materials such as lime.

Tree Climbing

(Continued from Page 25)

The question of financing the contestant for each organization naturally arises. Tentatively the Connecticut Tree Protective Association have a plan which will be submitted to their membership later. It proposes that the Association pay the contestants travel expense and add $35.00 to cover meals and room for one or two days. They hope that the employer might foot any additional expense, or possibly all. Ed Fennell of Bridgeport, Conn., has indicated he would be "only too glad" to finance his man should he win. We hope the sectional chairman will get this problem solved with his organization to avoid any confusion and possibly embarrassment, and after the contest he can contact the employer of the winner to determine if he will finance the boy.

The prize for the winner, runner-up and third-place man will be a beautiful cup with an additional cash prize which Dr. Chadwick now has up for consideration with the National Shade Tree Conference board of directors. This will be announced in the June issue of TREES Magazine.

It is hoped that this first National Tree Climbing Contest will be a stimulating feature of the Shade Tree Conference. We should like to see the finalists decked out in gay colored shirts or some distinctive outfit and it is our belief, that considerable national publicity may accrue to arboriculture from this colorful and different contest and the fact that above all other considerations, honor, glory, competitive skill, safety will be the keynote and principal basis for judging the winner. We hope this will catch the imagination of the conference members and that a colorful, interesting and friendly rivalry will be generated that should give everyone a lot of fun as well as to emphasize the constant importance of safety and safety practices.

This is everyone's contest and we want you all to get in and pitch.

Has Experience, But Wrong Kind

Louisville, Ky. — The City Civil Service office told this one here:

The city advertised for tree-trimmers to cut deadwood from the city's trees on a temporary, seasonal basis.

An applicant for one of the jobs answered all the routine questions, as to name, address, age, etc., then—

"What experience have you had in tree trimming?" asked the interviewer.

"Well," said the applicant, "I have trimmed our Christmas tree at home for 30 years, so I thought ———"

P. S.—He didn't get the job.

Aestheticism On the Rocks

Among requests for bulletins from Agricultural Extension Service at Ohio State University this week came one from Alfred J. Rowan of California.

Rowan made a general request for any agricultural information the Extension Service could supply. He wrote that he had 90 persons enrolled in two classes in agriculture.

Then he specifically requested the bulletin "Beautifying the Home Grounds."

Rowan is supervisor of education at California State Prison, San Quentin.

—Ohio State Univ. News.

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- Bracing Material
- Tree Compounds

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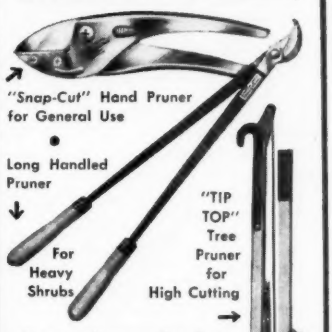

These and many other fine cutlery steel garden shears may be had at your hardware or seed store. To be sure of durable, easy-cutting "Seymour Smith" tools, ask for them by *name*. They are fully guaranteed. Insist on QUALITY —it always costs less!

New Pruning Handbook—Free
Just published! Authoritative book on pruning. Packed with each Seymour Smith pruning tool or send 10c to factory.
SEYMOUR SMITH & SON, Inc.
12204 Main St. Oakville, Conn.

YOUR LAWNS, TREES AND SHRUBS
NEED **PROTECTION** TOO
SPRED-O-STIK
USE *Wilson's* QUALITY

This improved wetting, spreading and sticking agent was recently proven tops out of 110 brands USDA tested. 35% retained after 8 rains.

ADVANTAGES OF SPRED-O-STICK

1. Wets sprayed surface better
2. Sticks longer
3. Prevents spotting of fruit due to concentration of residual spray
4. Better penetration of the poisons to vulnerable parts of insects
5. Uniform coverage, greater economy due to lower run-off.
6. Non-Soapy
7. Compatible
8. Can be used with hard water
9. Makes insecticides and fungicides more potent—particularly noticeable with turf fungicides and weed killers
10. Economical to use—1½ ounces to 100 gallons of water.

Pt. $1.00; Gal. $5.90; Case 4x1 gal. $22.00; 5 Gals. $24.00.

F.O.B. Springfield, N. J., or delivered in area serviced by our trucks.

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HORTICULTURAL CHEMISTS
DEPT. W SPRINGFIELD, N. J.

Authors and Books

The following books may be ordered from TREES Magazine, Box 5607, Cleveland, Ohio.

In this issue we are fortunate in having five top-flight books that are a combination of practical and academic value to practically any reader of TREES Magazine regardless of his field of horticultural endeavor.

As usual Dr. William H. Chandler, for years a stalwart supporter of the Western Shade Tree Conference, has produced a very learned and comprehensive work on "Evergreen Orchards." This book will be of academic interest only to most readers, but the background material will be a marvellous aid in broadening our knowledge of the value of trees to living.

"The Lorette System of Pruning" refers to fruit practice but many arborists engage in this work and should know this system. The book is historic and has been out of print for many years. This printing will not last long.

Too much cannot be said for the practical value of "Turf Management." It just about covers the problem from start to finish.

"Tree Crops" contains information every one should know to make him more conversant with his work. You will love Dr. Smith's style and caustic remarks.

The last of our five is "Deciduous Forests." This is a wonderful work on eastern North American forests, a job that required 25 years of field study by the author. You should know this book from cover to cover.

* * * *

EVERGREEN ORCHARDS, by William H. Chandler. Lea & Febiger, Publishers, Philadelphia. 452 pgs. Illus. $6.00.

The science of horticulture is a special part of the general field of botany concerned with orchard and garden plants. This textbook deals with the structure and physiology of evergreen species, most of which are grown for their fruit as food for people. It is written for those taking advanced courses and is designed to teach undergraduate students all that may be helpful toward the solution of difficult orchard problems or the improvement of orchard practices.

Some of the species discussed are the most important fruit crops in the world and compete with all deciduous fruits. Consequently, everyone who expects to own and operate a deciduous orchard will benefit by understanding these competing crops. Their study will enrich the student's life far more than the study of those crops with which he will be working most of his life. An aggressive student working with deciduous orchard species will learn what is known about them, regardless of how much time he has spent on them in college, but his experience in managing an orchard or in working with deciduous orchards will not give him the knowledge of these foreign species or of the people who grow them.

Teachers and students alike will appreciate the manner in which the tree and its fruit are taken up first, followed by a detailed discussion of the evergreen orchard environment. There is a full consideration of conditions favorable or unfavorable for production of fruit with good market qualities. Individual chapters are devoted to the characteristics of each of the more important species under consideration. Altogether, more than 80 species are given attention.

* * * *

THE LORETTE SYSTEM OF PRUNING, by Louis Lorette. Rodale Press, Emmaus, Penna. 239 pgs. illus. $3.00.

A spectacular success with fruit trees, as tested in Europe over a period of many years, Lorette pruning aims at the formation of fruit buds directly upon the main branches forming the framework of the trees. The method rests on two simple principles:

1. Maximum light, air, and nourishment for each main branch.

2. Restriction of pruning to late spring and summer, and to shoots which have become woody.

According to the author, trees as usually planted are in their least productive form. He shows how to eliminate superfluous branches and increase fertility, and demonstrates the French ways of training fruit trees into espaliers, pyramids, "vases," arches, etc.

The five chief tree shapes discussed by Lorette will be a boon to any fruit tree owner. Full month-by-month instructions are given for training each type, together with the proper planting distances. The mysteries of budding and grafting are fully explained. The 130 diagrams and photographs make the principles clear to you whether you own two trees or an orchard.

Both text and pictures are derived from the author's activities in the orchards at the Practical School of Agriculture at Wagnonville, Douai, in France, where M. Lorette was curator and professor. Long a standard work in Europe, this first American edition is the revised version from the 8th French edition; it has also been published in German, Spanish, and Italian. (Readers of other Rodale publications will know to disregard the author's recommendations of artificial fertilizers.)

Whether you are starting with young trees or wish to adapt older or neglected specimens to a more productive way of life, the Lorette system is a MUST. *Every chapter is a revelation!* Wherever it has been introduced, this method of pruning has found a host of enthusiasts. Now you can be the first grower in your vicinity to apply the Lorette system and enjoy the results.

* * * *

TREE CROPS, A PERMANENT AGRICULTURE, by J. Russell Smith. The Devin-Adair Co., 23 E. 26th St., New York, N. Y. 408 pgs. illus. $6.00.

If your farmland is washing away, and gullies are opening up . . .

If you have rocky, hilly pasture land which is yielding little or no profit . . .

If you need a windbreak which will also pay you money . . .

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The author, who is one of the best informed nut growers in the world, does not confine his delightful, down-to-earth information to trees already found in America. He has examined crop trees in almost every large area on the globe, and has a wealth of suggestions on the importation of new species.

These are some of the trees the author talks about: Honey Locust; Keawe, or Hawaiian Algaroba; the Carob; the Mesquites; the Mulberry; the Oak as a rich forage crop; the Chestnut (this chapter will astonish you); the Persian Walnut; the Pecan and other Hickories; and, above all, the Black Walnut.

Dr. Smith has much to say on experiments that every farmer can and should try out; on tree-farm management; on crossbreeding and fertilizing; on soil conservation, and on a wealth of other practical topics.

* * * *

TURF MANAGEMENT, by H. Burton Musser. McGraw-Hill Book Co., New York. 354 pgs. illus.. $6.00.

This informative, fully illustrated volume is the only book devoted exclusively to the development, care, and upkeep of golf turf, public park lawns, and other large grass areas. Prepared under the sponsorship of the United States Golf Association, it contains a wealth of new and hitherto unpublished information on the propagation of turf grasses, maintenance of turf, the use of fertilizers, drainage and irrigation, weed and insect control, and other invaluable data.

Here, for example, will be found important details on the correct variety of grasses to choose for specific types of soil, the best methods of sowing and caring for different kinds of grass seeds, and how to guard successfully against diseases, insects, and weeds. It includes all the latest developments and improvements in grass seeds, insect sprays, and agricultural tools. Comprehensive and up to date, TURF MANAGEMENT embodies the results of many years of research, experiment, and practice by experts of the United States Golf Association. It will be the standard authority for greenkeepers and greens committees, park commissioners and superintendents, custodians of lawns in public parks, cemeteries, and private estates, as well as homeowners who take pride in a beautiful lawn. Everyone concerned with grass and lawn areas will find this comprehensive handbook an ever-useful guide and reference volume.

* * * *

DECIDUOUS FORESTS OF EASTERN NORTH AMERICA, by E. Lucy Braun. The Blakiston Co., Philadelphia. 596 pgs. illus. $10.00.

This excellent scholarly book; while basically a reference book will no doubt be used by advanced students. As the author states, he attempted first to portray what is, or was, present in any geographic area and to reconstruct the pattern of original forest insofar as the fragments remaining permit; second, to give data on composition and aspect of forest communities in all parts of the deciduous forest; third: to trace thru geologic time the development of the present pattern of forest distribution.

The volume is composed of three parts. 1) Introduction—a) The Forest; (b) Forest Ecology and Terminology. Part two: The Deciduous Forest Formation. Part three: The Evolution of the Present Pattern of Forest Distribution.

This is an excellent work.

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Pittsburgh, Pa.—County commissioners ordered two-thirds of the elm trees surrounding Poet Joyce Kilmer's memorial at South Park chopped down so passersby could read, inscribed on a plaque, his famous lines:

"I think that I shall never see
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Curtis Wagner, Akron, O.

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